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ORIGINAL ARTICLES.

PRESIDENT'S ADDRESS*.

By Jabez N. Jackson, M. D., Kansas City.

As followers of the healing art we have reason to be proud of the rapid and eventful advance which medicine, both as an art and as a science, has made in the past century, and particularly in the last quarter thereof. The practice of medicine in one form or another is, perhaps, one of the oldest of all professions. Certainly its recorded history dates back many centuries, and its development even then indicates other centuries of previous study. In the archives of its recorded achievements in these ancient days, are found the names of many illustrious disciples whose greatness is recorded as well in the pages of general history, and some, indeed whose fame was so great as to connect them in the lay mind with those gods of old mythology, masters as well in earth and sky. It is noticeable that many of the earlier leaders in the healing art were known as well as masters in the realm of general philosophy, and like the philosophy of these early days medicine was a strange compound of theoretical mysticism and empiricism, in which was mingled a little truth, many vagaries and much falsehood. Their ideas of physical conditions were largely the evolutions of metaphysical conceptions with little and oftimes nothing of material foundation. To us, in these days of scientific investigation, there is in their work much to amuse but little to instruct. And yet when viewed in the light of the general development of those times there is much to admire and to commend, whose study is well worth the time of our leisure hours. In fact, there are many examples of the *art* of medicine even in these crude days of mental evolution which evoke our full amazement, though as a *science* progress was scarcely even begun. And yet withal it is evident that the disciple of medicine was even in these days looked up to with awe and veneration, and commanded a respect which in this day of scientific achievement we can but envy in surprise.

The progress of medicine toward recognition as a definite part of true science has been, however, almost en-

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tirely the result of the work of the past one hundred years, during which time more absolute advancement has been made than in all the centuries upon centuries which had gone before. The battle-cry of freedom lifted from the shores of this grand country was echoed and re-echoed through the length and breadth of every land, and became the slogan of a new era of activity no less in the realm of mental endeavor than in that of politics. Minds long shackled by the iron bands of conventionality, and investigation restrained by the restrictions of prejudice and superstition, caught the breath of the new inspiration and spread their wings for the higher realms of absolute knowledge. For beliefs before handed down without question and accepted in blind faith, the freed intellect now demanded proof and demonstration. Ignorance and empiricism were forced to yield their prestige and to submit their claims to the cold court of scientific research. Cherished theories of ages were thus wrecked in a day, but in their ruins arose the marble palace of Truth. Laboratories and museums, the test tube and the crucible, the microscope and the stethoscope have become the agencies through which the true has been separated from the false. Dogmatism has been forced to yield to demonstration, and lo! in a few brief years medicine has blossomed forth as a *science*, new and incomplete 'tis true, but already recognized and welcomed by its elder sisters in the family of facts. To enumerate its scientific achievements in this brief time would be an endless task. Sufficient to cite alone the discovery of the existence of germ life, and the evolution of the knowledge of its pathogenesis, and the patient researches which led to the ways of prevention and to the ways of cure. Is it not grand enough glory for a century's satisfaction to know that through these efforts the black cloud of pestilence has been lifted from the face of the earth; that cholera, with its agonizing fatality, has practically ceased to exist wherever the intelligence of the people has been willing to accept and to follow the wisdom of medical instruction; that the scourge of smallpox, bringing death or disfigurement, has been so shorn of its terrors that even when it does lift its isolated head it is as harmless as a domesticated pet; that yellow fever is no longer known on the shores of modernized countries; that even "the great white plague," consumption, is being so brought within control that in scientific medical Germany it has been reduced approximately eighty-four per cent; and that diphtheria, that dread disease whose very mention brought the pallor of terror and despair to the loving mother's face, has come to be but as a zephyr's ripple on the placid sea of childhood's voyage?

And yet, fellows of the medical profession, as we face the conditions which confront us today, do we find outside our own consciences the evidences of similar improvement in the recognition of our art? Do we find that, proportionate with our increase in scientific exactness, there has come an exaltation in the honor of our name? Do we find in the hearts of the people whose longevity has been increased, whose mortality and agony has been reduced, and whose material

prosperity has been enriched—do we find here that gratitude and praise which in our own thoughts we could but feel were due? Do we find the names of *our heroes*, whose learning and whose labor, whose exposure to danger and whose sacrifice of pleasure, nay of life itself, have yielded these blessings to mankind—do we find these names in honor enshrined in the Temple of Fame, or commemorated by marble shafts which raise their lofty peaks to Heaven, beside those of the warrior chief and the statesman famed? In honesty and in candor with the people and with ourselves, there is but one answer to these questions, and sadly that is, No. And yet in this answer I trust we breathe not the spirit of pessimism, nor feed our discontent with railing or complaint. For while conditions are not such as our pride and spirit might desire, yet the explanation is found rather in the fact that we have not been understood than that we have been maligned. Nor is it strange that a science which deals with the secret mechanism of life, strange and oftimes incomprehensible even to the master student's mind, should be poorly comprehended by those who know life but in the living? The greatest minds have ever been mysteries to those of other mould; and recognition is oftimes tardy to achievement in its time. The very ethics of our practice has compelled reticence and restraint where modest genius gives its life in love, unknown, unhonored and unsung. These traits we cultivate and their fruits we eat, and they satisfy our conscience though they starve our pride. So, for ourselves, there will ever be satisfaction in the consciousness of the work which we have done, knowing that with time and enlightenment will come the honors which are due.

But from the standpoint of the mission whose fulfillment is our dream, there comes a more practical suggestion whose consideration we must approach. Too long we have lived in seclusion, within the limited shell of our own profession, content with the discharge of individual duty to the clients whom we serve; too much have we been absorbed with the problems which our own practices present; too limited our study to the science which we serve. And in the meantime, through our isolation, dogmas and creeds, quacks and impostors have sprung up throughout the land, and, masquerading under the guise of new research, have come to bar our progress and to thwart our plans. With cunning creeds of sophistry they seek to deceive the people and to steal the cloak of truth. With boasting claims of vain glory they constantly fill the public ear; with spreading columns of advertisement they fascinate the credulous eye, and with brazen effrontery purchase the endorsement of respectable men. With seductive proffers of commission they extend their trammel net, and with fees for advertising subsidize the public press. Even in the halls of legislation they seat their purchased slaves, and fill the aisles and lobbies with their agents in disguise. Even lawyers of distinction, for retainer-fees assist, while preachers of the gospel oft become their secret aides. Quackery is rampant, and, hand in hand with commercialism, its encroachments threaten no

less the honor than the life of our profession; while the people, who are its victims, sit idly by, unconscious (apparently) of the dangerous tendency of its course. Break down the barriers which scientific medicine has erected for the preservation of human life, and what would Christian Science and osteopathy do in the face of a devastating scourge of cholera? Remove the guards which the watchful profession has set in the quarantine of our land, and what would the advertising quack or magnetic healer do to cope with the horrors of bubonic plague? Wipe from memory the work of Walter Reed and his heroic band of investigators, and hear the business interests and the public press lift to high heaven their lamentations over business paralysis following an epidemic of yellow fever in our southern states.

Surely, could the people but go back to where they were, they might more forcibly realize where they are. And if this be true of yesterday, what will be true to-morrow as the result of the obstructions of to-day? Surely, medical men of Missouri, the time has come for action—action for our science's glory and the public weal. The time has passed when we can longer rest contented in the tranquil peace of our individual practice. The time has passed for petty jealousies which rend in twain our harmony and bring discredit to our grand profession. The time has passed for indifference to the greed of graft, which steals our honor through the elusive siren of success. The time has passed for individualism when professionalism is assailed. What we know and all we know is the heritage bequeathed us by a profession whose milk has made our blood; and to this glorious parentage we owe devotion and the honor of our lives; and to her sons, our brothers, we owe the love to brothers due. Then, fellows of the Missouri State Medical Association, we must *organize* in harmony and in unity, from north to south, from east to west—in county, state and nation. And, in the language of another may I say, "Ours is a noble profession; be worthy of it. Master it, advance it. Devote ourselves to medicine and to humanity. Let success take care of itself. Then at all times we shall be able to say:

"'Serene I do my task and wait,
Nor care for wind or tide or sea;
I rave no more 'gainst time or fate,
For lo! *my own shall come to me!*'"

SYMPOSIUM ON THE ST. LOUIS WATER SUPPLY.*

St. Louis Water Supply.

By Edward E. Wall, Esq., Assistant Water Commissioner of St. Louis.

The Water Commissioner, not being able to be present this evening, has asked me to prepare and read a short paper on the water supply of the city. I shall endeavor to give you but a very superficial sketch of the salient features of the waterworks generally, with special reference to some of the mechanical and practical characteristics of the clarifying plant and process.

For the past ten years the entire water supply for the city of St. Louis has been taken from the Mississippi river at the Chain of Rocks, some eleven miles above the Eads Bridge. For twenty-five years previous to the operation of the Chain of Rocks station the intake was at Bissell's Point, about seven miles further down the river.

The Chain of Rocks station has a pumping capacity of 160,000,000 gallons every twenty-four hours, the pumps being supplied through a seven-foot tunnel connecting the pump well with the intake tower. The tower stands well towards the main channel of the Mississippi, about 1,500 feet from the Missouri shore and is equipped with gates at various elevations so as to draw water from near the surface of the river at its various stages. The tunnel is divided into two sections, the river section and the shore section. The river section is driven through the limestone bed of the river, some fifty feet below the river bottom, and is connected to the shore tunnel, which is about thirty feet nearer the surface, by what is called the uptake shaft. This shaft is eight feet in diameter and is open to the surface. It drains both the river and the shore tunnel and is connected to another larger shaft forty feet away, called the pit pump shaft, where pumps may be set in case it becomes necessary to pump the tunnel dry for examination or repairs. The flow of water through the tunnel is by gravity and it will supply about 150,000,000 gallons per twenty-four hours at the lowest stage of the river.

The engines deliver the water to the settling basins, through a nine-foot conduit which is connected by gates to each of six settling basins, 400 feet by 670 feet and about sixteen feet deep. The basins collectively will hold 170,000,000 gallons. From these basins the water flows by gravity through a masonry conduit, nine feet by eleven feet, as far as the Baden High Service Station four miles below the Chain of Rocks. From there the conduit is reduced in size to seven and three-quarters by nine feet, for three miles to the Bissell's Point High Service Station. Along the east side of this conduit is the Waterworks Railroad, which delivers freight to the stations and carries the employes between stations. Passenger cars are operated by electricity, while all freight cars are hauled with a steam locomotive.

At the Baden Station are six triple expansion pumps with an aggregate capacity of 80,000,000 gallons per twenty-four hours. These pumps

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operate under a steam pressure of 140 pounds and deliver water at a pressure of 125 pounds per square inch. These pumps supply water to the high level districts of the city—principally in the western and southern part.

At the Bissell's Point Station there are two engine houses, each containing three pumping engines. In No. 1 engine house are three triple expansion engines, similar to the Baden pumps, with a total capacity of 60,000,000 gallons daily. In No. 2 engine house are three beam and flywheel engines, pumping about 50,000,000 gallons daily. These engines operate under a steam pressure of thirty-five pounds. All engines at Bissell's Point deliver water at a pressure of 100 pounds per square inch and supply the low level districts of the city. The average pressure of 548 gauge readings taken over the entire city is fifty-five pounds per square inch—the maximum being 110 pounds and the minimum twenty-five pounds. There are about 730 miles of cast-iron pipe of all sizes in the city, belonging to the department, on the lines of which are 8,438 fire hydrants, 104 of which belong to private parties.

The daily consumption of water will average over 70,000,000 gallons throughout the year, the maximum rising as high as 110,000,000.

The method of clarifying this amount of water daily is the most interesting feature of the St. Louis Waterworks at present and is deserving of much more favorable notice than has so far been given to it. Simply to say that the water is clarified by the use of lime and sulphate of iron conveys no idea of the beautifully simple and harmless process that is actually in use. The coagulation house is built on the river bank over the uptake shaft and is divided into three main divisions, the storage bins for lime in one end, the bins for sulphate of iron in the other end, while the central portion of the building is used for the mixing tanks, pumps and machinery. Sulphate of iron readily dissolves in cold water, so that it can be quickly put into solution, ready to add to the raw water. The tanks for dissolving the iron are four feet by five feet by three feet deep with an outflow pipe two feet above the bottom. They are supplied with a continuous flow of cold water through a series of small nozzles distributed over the bottom of the tanks. Each tank will dissolve a maximum of sulphate of iron of 1,800 pounds per hour.

The lime tanks are circular, six feet in diameter, three feet in depth, provided with revolving rakes or stirrers. These tanks are supplied with water at a temperature of about 120° F, for the reason that lime slakes too slowly in cold water to make a continuous process practicable. The outlet pipes are two feet above the bottom. To undertake to describe all the details of the plant would extend this paper too much, but the exceedingly simple way in which the lime and iron are introduced into the raw water in proper quantities, is especially worthy of attention.

Both the lime and sulphate of iron are weighed out in proper amounts, corresponding to the quantity of water being pumped every five minutes at that time, and also according to whatever ratio of chemicals it is wished to use. These weighed charges are

dumped into their respective tanks every five minutes, sufficient water being furnished to all tanks to entirely dissolve the sulphate in the one case, and to slake the lime in the other, by the time it is necessary to add the next charge. The amount of water supplied the tanks need not be constant so long as enough is added to take care of the chemicals. This method gives practically a uniform supply of iron sulphate in solution and of milk of lime as long as the pumping rate and the chemical ratio remain unchanged — although the strength of the solutions themselves will vary with any change in the flow of water supplying the tanks. This simple and original scheme does away with all need of meters, measuring boxes or weirs; an ordinary platform scale for weighing is all that is necessary.

The iron solution flows from the tanks through a pipe down the uptake shaft into the tunnel, where it mixes with the river water on its way to the pumps. The milk of lime is pumped by a centrifugal pump from the coagulating house to the delivery well, where it mixes with the discharge from the low service pumps.

The water then flows by gravity into the settling basins, and in its passage through these basins it loses all its suspended matter, part of the dissolved solids and practically all its bacteria. The walls between basins have been cut down so as to form weirs 610 feet long, over which the water flows from one basin to another. The process taking place is one of flowing sedimentation, the water entering the basins at one end, flowing slowly through all of them, and being drawn out of the last basin clear and wholesome.

For a period of 300 days from March 23, 1904, to January 15, 1905, the cost of chemicals alone was $3.56 per million gallons pumped into the mains. The addition of the cost of necessary labor to operate the coagulating plant brings the cost per million gallons to $4.07¾. Mr. Hazen of the hydraulic commission gives $4.73 per million gallons, as the cost of operating a filter plant.

A great many difficulties have arisen during the building and operation of this temporary plant, which could not have been foreseen, and which had to be overcome by original methods, since there were no precedents to follow and no previous experimenter's work to serve as a guide. The water at times has been far from clear, but at all times has been an improvement over the raw water. The work so far as it has progressed and as successful as it has proven to be, has been the result of united, persevering, and intelligent efforts on the part of all the employes connected directly with the clarification work of the department—and no one man is entitled to arrogate to himself all the credit of this great achievement. For it is a great achievement, and while there remain many important problems yet to be solved, the main and most important of all may be considered to have been worked out—the evidence of which is daily before your eyes and its effect plainly shown in your weekly health reports.

Method of Clarification of the St. Louis Water Supply.

By John F. Wixford, Esq., Chemist to the City Waterworks.

I have here three jars of river water, and will show you three different methods of clarifying, namely: the alum method, the Quincy process, and the method employed at St. Louis. I will show you the different ratio of lime used in St. Louis compared with the Quincy method.

To the first jar add 3 grains of sulphate of aluminum to the gallon; for the Quincy method I will add to the second jar 3 grains of ferro-sulphate and 1 grain of lime; and for the third jar, representing the process used in St. Louis, I will add 2 grains of ferro-sulphate and 6 grains of lime. While settling I will try to explain what the reactions are.

In the experiments here I am using a solution of lime containing about 0.13 of 1 per cent. of lime for convenience, but at the works we do not use limewater, but milk of lime. It is necessary to keep the water agitated about three minutes in the process used at St. Louis. The reason for this stirring is that the hydrate of iron is precipitated by a portion of the lime, and if I allow the water to settle at once the iron precipitate will settle down before the action of the balance of the lime upon the constituents of the water is finished. The crystals formed in this reaction have a tendency to attach themselves to the ragged surfaces of the iron hydrate in the water with which they come in contact, and will go down with this precipitate, leaving the water perfectly clear after a few minutes. If it is not stirred the water will settle pretty clear at first, and then become milky afterward. The object of the stirring is to keep the hydrate of iron in suspension until the lime reactions are complete, and thus furnish surfaces to which the crystals of the lime reaction may stick. You may think I am adding a great deal of lime, and that this will make it pretty expensive; but for every grain of lime I add up to caustic alkalinity it is civic economy, for it is a saving of a great deal of soap. It is also economy in the sense that for every grain added, nearly two grains of calcium carbonate are removed. It is this which forms boiler scale, a non-conducting substance. Much has been said about the sulphate scale, a hard scale, but it is not such a bad conductor as the porous carbonate scale. We admit the iron into the water before it goes into the pump, and the lime after it has passed through the pump. The reason for admitting the lime after it passes through the pump is because just as they come out of solution the carbonate of lime crystals have a tendency to stick to everything they strike, and the pumps will soon be coated all over with the carbonate of lime scale. Now, if you will look at these jars, you will have to say that St. Louis is ahead.

Now as to the reactions. In the alum process hydrate of alumina alone carries down the suspended matter. In the Quincy process there is some bicarbonate of iron formed, and the precipitate of iron hydrate is the only precipitate that does the work, lime being added only in sufficient quantity to change the bicarbonate of iron to iron hydrate. In our process we add the ferrous sul-

phate and we change the water into an ordinary chalybeate water; after that we add a large excess of lime. A portion of this lime combining with the iron forms hydrate of iron, a strong coagulant, and some insoluble calcium carbonate; another portion acts upon the calcium bicarbonate left in the water to form insoluble normal calcium carbonate. It further changes the magnesium constituents into insoluble magnesium hydrate. Other portions act upon the suspended silicates and upon the silicic acid, and also upon the organic compounds. All of these last precipitates are themselves coagulants. You know very few lime salts are soluble, and you can add almost anything to the raw water and eliminate it. You can put copper, lead or almost anything in the river water, and after this treatment you will find it is gone.

Now, as to the cost of this process. Those three grains of alum would cost as much as fifteen grains of lime; the two grains of ferro-sulphate and the six grains of lime in the St. Louis process cost as much as ten grains of lime; so that with less cost we get clearer water. With this method we get clear water in six to ten minutes, while with the other methods it will require eight to ten hours. This process is more efficient in that it not only clarifies, but purifies the water, and it is also a softening as well as a purifying process. To determine the lime to be added we take a series of jars and add 1 grain, 2 grains, 3 grains, etc., to 6 grains of lime per gallon. After standing awhile there will be noticed a break in the series somewhere beyond 4 grains per gallon. Before that break 1 grain will do more work in clarifying than 2 grains or 3 grains per gallon; beyond the break all clear well. Before the break there is none of the caustic alkalinity; beyond that point there is caustic alkalinity. So we select the jar before the caustic alkalinity as the standard by which to gauge the amount of lime to be added. When treated by this process, as we have treated it here, you will find the water as free from bacteria as any filter would produce. But the city cannot expect to get bacteria-free water in the present state of the system. The bottom of the basins contain some mud; we may take up some bacteria. In removing the bacteria we don't kill them by poisoning them; they get tangled up in the coagulum and are carried down mechanically. You can take some of the mud from the bottom of a basin and make a smear and you will find millions. It is merely a process of clarification and purification without a filter. I do not know of any place where they use this process; it is a combination of several processes. We do not aim to get any caustic alkalinity. We aim to keep free lime out of the water. Up to the point of caustic alkalinity every grain of lime we add is a big economy; beyond that it is a waste of material.

Results of Bacterial Examination of City Water Before and Since Clarification.

By Dr. C. A. Snodgras, City Bacteriologist.

Possiby no water supply has called for such an outlay of money nor has had brought to it a wider array of talent than that of St. Louis. You are all acquainted with the investiga-

tion, and whatever the results may be the entire scientific world feels it owes a debt of gratitude to St. Louis and Chicago. It would take hours were I to try to discuss this subject fully; therefore, I will make only a few plain statements. You want the findings before the present method of purification was instituted and those since it has been employed. I have copied here all the bacteriological findings in the second investigation, March 22d to the last of November, 1900; also the bacteriological findings in the third and last investigation, done in September, October and November. I will just give you the totals. Bacteriological examinations are made along two lines, quantitative and qualitative. The first is done for two reasons, to ascertain if there has been polution from sewage or washings from the soil, and to obtain information of the efficiency of the method used in purification. Recently some eastern workers have taken up the subject of some anærobic organisms. In Havana, at the meeting of the A. P. H. A., it was stated that we were coming back to the old coli determinations, and the committee on water purification reported that it considered the colon bacillus the best index to sewage pollution. The bacterial removal is about the best guide to the efficiency of any system of purification. In no work, however, does the individual factor play a more important part. If two men collected samples of water at the same minute, frequently they may vary 8,000 to 10,000 organisms in their count; therefore, it would be useless to read what my findings were as compared with those of some other man. In 1901, from the intake tower to the reservoir, for seven weeks there was a removal of 48 per cent. In the reservoir the water stood for seventy hours. I asked the water commissioner yesterday for the accuracy of that figure, but he could not be certain about it. I believe now it stands about thirty hours. On page 205, volume I, of the Chicago Drainage Canal proceedings, it is stated that from the intake tower to laboratory tap at the old city hall there was a total bacteriological removal of 90 per cent. I will now go into the third period, the last three months of the investigation. I find here the bacteriological removal for September from the intake to the outlet chamber was 48.43 per cent.; from the intake to tap for September was 83.88 per cent.; October, from the intake to outlet chamber, 85.6 per cent., and for November 81.5 per cent. From the intake to the tap for October 95.9 per cent., and for November 93.2 per cent. For that three months the average removal from the intake to the laboratory tap was 92.64.

During the last year the work I have done was not for the purpose of getting new figures. I had so many other duties to perform that the board of health thought it wise to reduce that work to the minimum. With the modern method of finding the colon bacillus it can be found in almost every cubic centimeter of water. I have made weekly analyses for the past year. These analyses were for the purpose of ascertaining the efficiency of the present system. This method of clarification was instituted as a necessity. We felt that we had bathed in mud long enough. The

experts said we could go on and build basins and filter the water later, and I believe that was what the authorities were looking forward to. Then the question arose, if we got clear water whether it would be wise to add filter plants if the bacterial removal was sufficient to warrant the use of the present system. I have stricken out two of these months because the removal was so low that I felt there must be some error in technique. In one week in April the removal was only 75 per cent. from intake tower to the tap. The average removal of bacteria from the intake tower to the laboratory tap for the period of thirty-seven weeks was 94.6 per cent. (April 1, 1904, to March 31, 1905).

You will now ask if we are going to adhere to the present system; if so, how can we improve upon it. The only criterion to go by is the result of past experience. Mr. George Fuller, who has supervised the putting in of some of the largest waterworks in the country, says that the best that has been done by mechanical filtration is the removal of 96.4 per cent. Mr. Wixford, chemist of the water department of this city, has intimated that the basins were full of mud, and that if this mud was cleaned out it was his opinion that we would get better bacterial removal. It is not the system, but the operation of the system that keeps the bacteriological removal as low as it is. This treatment has no bactericidal effect. You have asked me for figures as to what was found before and since the introduction of the system, and I believe this is all that is necessary for me to say on the subject.

Statistics of Typhoid Fever in St. Louis.

By Robert Moore, C. E., St. Louis.

The statistics of typhoid fever in St. Louis are based on the mortality records found in the reports of the St. Louis Health Department. To obtain the rate per unit of population, which in this case has been taken as 10,000 persons, the writer has, when possible, used the population values of the United States census, the figures for the intercensal years being obtained by scaling from a carefully drawn diagram.

The series begins with the year 1850. But as before this time typhoid, or enteric, fever was not, in official reports at least, differentiated from typhus and simple continued fevers, the figures for earlier dates, even if we had them, would have little or no value.

St. Louis in 1850 had a population of a little less than 78,000 (77,860). The preceding year had been deeply marked in black; first, by the great fire (which, on the night of May 17, 1849, destroyed twenty-three steamboats and many blocks of buildings in the business district of the city); and, second, and more strongly, by one of the most serious epidemics of Asiatic cholera of which we have a record. This visitation began on the last week of 1848, and steadily increased until in July, 1849, the deaths from this single cause reached the alarming figure of 145 in one day (July 10th), a rate which, if continued for a year, would have destroyed three-fourths of the population. But though this was its culmination, it remained for years an important factor in the life

history of the city. In 1850 the death rate from this cause was over 11 per 1,000; in 1854 it assumed epidemic proportions (14.22 per 1,000), and it was not until after 1855 that it practically disappeared. As typhoid fever is promoted by the same conditions and carried by the same vehicle as cholera, the presence of the latter disease is a fact which cannot be overlooked in a study of the former.

In 1850 the city waterworks, which dated from 1832, consisted of a small pumping plant located at the foot of Bates (now Dickson) street, two storage reservoirs at Twentieth and Benton streets, and a few miles of small pipes. The storage reservoirs soon filled up with mud, which there were no means of removing, and the water was delivered to consumers in practically the same condition in which it was taken from the river. The principal source, however, of the domestic water supply was from wells, which were always shallow and easily polluted.

Though for eighteen years the city had a public water supply, not a single sewer in the modern sense had yet been built. It is true that a few stone or brick culverts had been built by private parties across the levee to drain property adjacent thereto, but they were not intended for the reception of house drainage, and, as a rule, the ordinances which authorized their construction expressly forbid any such use of them. But in this year, March, 1850, the first sewer, known as the Biddle street sewer was put under contract. A few months later (July–August, 1850), ordinances were passed establishing a system of sewers for the drainage of the territory between Biddle and Poplar streets and between Ninth street and the river. During the latter part of 1851 the Biddle street sewer was put in service, and from time to time thereafter the other sewers for which provision had been made were added to the system. But until their completion house drainage was, of course, impossible, and the use of the privy vault for the final disposal of all household wastes was universal.

The presence of a city water supply, which could only pass off on the surface or into the ground and thence to the wells and privies, greatly intensified the inevitable dangers of such a situation. As a consequence much trouble was experienced throughout the city from standing water in cellars, even in the higher parts where such a thing would hardly be expected. In the year preceding (January 27, 1849), the *St. Louis Republican* had said: "There are few blocks in the city where there are not cellars containing more or less water. A large number are full, or nearly so, particularly east of Fourth street, that is to say, on the hillside."

Under such conditions the very high typhoid rate, to-wit, 25.7 per 10,000, is not surprising. In the following years, however, as the sewers came more and more into use, the typhoid rate rapidly declined. True, there are fluctuations, one of them in 1854, when, as already noted, there was an epidemic of cholera. But the general tendency is sharply downward until, in 1861, we find a rate of 5.95, or only 23 per cent. of the rate ten years before.

And now for some years an upward tendency appears until, in 1866, when

again there was an epidemic of cholera, we have a rate of 19.63. For this reaction the chief cause is, no doubt, to be found in the building of sewers in the north part of the city, notably the Chambers street and Rocky Branch sewers, which, in 1861, were already well advanced, and the consequent pollution of the river immediately above the waterworks intake.

The danger of such pollution had already been recognized, and as far back as 1857, the City Enginer, Mr. Hassendeubel, had recommended to the Council the building of new works with an intake station at a "point north of Bissell's Ferry." In 1863, an act of the Legislature authorized the appointment of a Board of Water Commissioners and the construction of new works, located at Bissell's Point, which at that time was above all the city sewers.

Meantime the typhoid rate had fallen below that of 1866, but was still very high, the average of the four years 1867 to 1870, inclusive, being 11.66 per 10,000. But in 1871, during which year, in May, the new works at Bissell's Point were put in service and the old works abandoned, the rate at once fell to 6.78, the lowest rate since 1862. Except for a slight rise (74-100) in 1877 this downward tendency continued until, in 1878, the rate had fallen to 2.22, or less than 21 per cent. of that of 1870, and the lowest ever reached up to that time in the history of the city.

After this time until the end of 1871 the rate was somewhat higher than in 1878, though still very low as compared with the preceding periods, the mean for the thirteen years, 1877-1891 inclusive, being 3.66 per 10,000 living—a rate which, excepting in the two years 1876 and 1878, had never been reached before. But as time passed and the population north and west of the waterworks became more dense there was a gradual introduction of sewage into the streams entering the river above Bissell's Point, notably into the nearest one, namely Harlem Creek, which had in effect become an open sewer for a drainage area of nearly six and one-quarter square miles (3,800 acres). The sharp rise in the typhoid rate from 3.57 in 1891 to 9.80 in 1892 was so clearly due to this cause that the water commissioner was induced to place at Harlem creek a pump by which the dry weather flow of the stream was delivered into the river below Bissell's Point. The drop in the typhoid rate from 9.30 in 1892 to 4.43 in 1893, or more than 50 per cent., points unmistakably to the relation of effect to cause.

The Harlem creek pump was maintained until, in 1895, Bissell's Point was in its turn abandoned as the source of supply and the present intake station inaugurated at the Chain of Rocks, six and three-quarter miles further up the stream and above all present or prospective sewage originating within the city itself. This was accompanied by a drop in the typhoid rate in 1895 to 2.10, followed in 1896 by 2.03, in 1897 by 2.32, and finally in 1898 by 1.73, the lowest recorded rate in the history of the city.

Then came a period of five years (1899–1903) in which the rate increased slowly year by year until in 1903 it reached 4.65 per 10,000, the highest rate since 1892. During this period, viz., on January 17, 1900, the

Chicago drainage canal was put in service and no doubt contributed something to this rising rate. It will be noted, however, that the total increase (2.92 per 10,000) in this five years was only half the amount (5.73) produced in a single year by the pollution of Harlem creek. The year 1904, on the other hand, was marked by a decline to 3.54, which, however, if we except 1903 is still larger than the rate of any year since 1893.

If, now, we look back over the whole fifty-five years we find good reason for gratification and encouragement. In the first ten years (1850-59 inclusive) the mean typhoid death rate per 10,000 was 15.72; in the last ten years (1895-1904 inclusive) this rate was 2.84. In other words, for every hundred deaths from typhoid fever in the first decade there were in the last decade only eighteen.

But in addition to knowing our position with reference to our own past, we ought also to know how we stand in comparison with other cities. This question is in part answered by figures given in the "Abstract of the Twelfth Census" (1900), showing the relative rank in typhoid deaths per 10,000 living of fifteen of the largest American cities. In this series St. Louis is number eight, that is it stands exactly in the middle. Those above us are New York, Milwaukee, Detroit, Buffalo, Boston, Chicago and Cincinnati. Those below us are Baltimore, Philadelphia, San Francisco. Cleveland, New Orleans, Washington and Pittsburg. It is worth noting, however, that of those in this lower class four, to-wit, Philadelphia, New Orleans, Washington and Pittsburg, as well as Cincinnati, in the upper class, are now arranging to filter their supply, after which their positions on the diagram will be greatly changed, and St. Louis will no doubt stand relatively much lower.

To further show how American cities stand in comparison with the mother country the figures of typhoid mortality from 1850 to 1903 inclusive for London and for England and Wales as a whole, copied from the reports of the registrar general, are also given in the table.

From these it will be seen that, with rare exceptions, London—and substantially the same thing may be said of England and Wales as a whole—has always outranked St. Louis. For example, the average typhoid rate for London for thirty-five years, from 1869 to 1903 inclusive, is 1.92, whilst for the same period in St. Louis the rate was two and one-quarter times as great, or 4.34. In 1903 the rate for all England was 1, and for London .83 per 10,000, rates which have, so far as we know, never been equaled in any American city. When we remember that by far the larger part, say seven-eighths, of the London water supply is taken from the Thames, a small stream draining a dense population, these figures are very significant. The secret, of course, lies in the fact that for fifty years all the water taken from the Thames has been filtered.

So that, whilst St. Louis has accomplished much, it is very clear that her work is not yet done.

Discussion.

Dr. Ravold said that the water supply of St. Louis is taken from the Mississippi river at a place known as The Chain of Rocks, fourteen miles

by river above the center of the city. The Mississippi river at this point is made up of a mixture, more or less intimate, of the waters of the Missouri, Mississippi and Illinois rivers. The Illinois and Mississippi unite at Grafton, Illinois, thirty-nine miles by river above St. Louis. The waters of the two rivers do not mix intimately at once, but flow along, the Mississippi river water hugging the Missouri shore and the Illinois river water the Illinois shore for many miles. The water of these two rivers, as a rule, is clear. Twenty miles below Grafton the Missouri river ("the Big Muddy") flows into the Mississippi, pushing the Mississippi and Illinois waters over against the Illinois shore, while the muddy Missouri water clings to the Missouri shore. Thus divided the three river waters flow along, somewhat mixed, but not intimately, until the intake of the present waterworks is reached. The intake tower of the waterworks is situated near the middle of the river, on the Missouri side, however, fifteen hundred feet from the shore. Inasmuch as the Missouri river water clings to the Missouri side of the river, the water at the intake tower is, for a greater part of the time, Missouri river water — biological and chemical investigations show about 70 per cent. of the time. However, whenever the flood volume of the Mississippi river or the Illinois river is high, either one of these river waters may prevail at the intake. The Missouri river water, from a biological standpoint, is the best of these three river waters, and the typhoid statistics of the city confirm this assertion. When the Missouri water prevails at the intake, the typhoid death rate is low; when the Mississippi, and especially when the Illinois river water, since the opening of the Chicago drainage canal, enters the intake, the typhoid death rate is high.

From the river the water flows through a tunnel by gravity to the pumps, and is then lifted into six settling basins, each having a normal capacity of 56,000,000 gallons. During the three years in which he conducted the biological investigations (1899, 1900, and 1901–2), the water rested in the basins, on an average, seventy hours, Dr. Snodgras' contention to the contrary notwithstanding. Dr. Ravold received the information in an official communication from Mr. Ed. Fladd, the then water commissioner, who had thoroughly investigated the subject.

From the reservoirs, as Mr. Wall has explained, the water passes into an eleven-foot conduit to the high-service pumps at Baden, four and a half miles from The Chain of Rocks, and is pumped to the stand-pipe in the Compton Hill Reservoir Park. From here it is distributed into the western part of the city. The remaining water flows through a nine-foot conduit and empties into four reservoirs at Bissel's Point. Here it rests from three to four days on an average.

During the second period investigation, which Dr. Snodgras mentioned, samples of water were collected and plated on the spot from the following places: Intake tower in river; outlet of settling basins, Chain of Rocks; outlet of reservoirs, Bissel's Point; tap at old City Hall,

Market street; tap at 5946 Garfield avenue.

Per cent. of bacteria removed from river to outlet of settling basins, after water underwent quiescent sedimentation, 71 per cent.; outlet of reservoirs, Bissel's Point, 90 per cent.; tap at Market street, 92 per cent.; tap on Garfield avenue, 95 per cent.

In other words, from river to outlet of settling basins, 71 per cent. of bacteria were removed by sedimentation; and to consumer, 92—95 per cent.; 25 per cent. of the bacteria disappeared (died) in the pipes of the distributing system.

It will be seen from these figures that the present method of treating the water removes about 2 per cent. more bacteria from the river to the consumer.

He wished to express his very great admiration for Mr. Wixford's methods and the results so far obtained, and to congratulate him highly, especially for the betterment which is hoped for and promised in the future, when the engineering features of the experiments that are now being made will have been completed.

He wished to thank Dr. Bernays and his assistants for the very able and graphic chart presentations of the results obtained in the chemic examinations of the waters before and since the chemical treatment of the waters.

For Mr. Moore's able and concise paper on the typhoid statistics of the city he expressed great admiration. Of the chart of the typhoid statistics exhibited showing the rise and fall in the typhoid fever death rate, he wished to call particular attention to the epidemic of typhoid, graphically shown, of the year 1892. In 1892 3,654 cases of typhoid fever, with 514 deaths, were reported to the health department by the physicians of the city. Just as soon as it was clearly established that a typhoid epidemic really existed, a committee from this society was appointed to investigate the source of the disease. After a careful investigation the committee came to the conclusion that the drinking water was polluted and was the source of the epidemic. A committee, composed of Dr. Charles E. Briggs, James M. Leete (both now deceased), Dr. Walter B. Dorsett and Dr. Wm. N. Beggs, together with the then sanitary officer of the health department, Mr. Charles W. Francis, visited the waterworks, then located at Bissell's Point. Standing on the bridge of the intake tower, they noticed a black streak of water in the yellow water of the river, and that a part of this black water ran into the intake. They followed this streak up the river about a thousand yards, and found it to be water discharged from Harlem creek into the river. Harlem creek drains a vast area in the northern part of the city, extending as far south as Cora place on Easton avenue, west to the cemeteries and east to Twentieth street. The sewage from this great area, together with offal from slaughter-houses and the manure from a number of large dairies built along the creek, all discharged into it, ran into the river, and was pumped into the water supply of the city! *We were drinking this frightful, deadly pottage!*

To the everlasting credit of this society, and especially to the untiring

energy and intelligent efforts of Dr. Leete, the city authorities were induced to build a dam across the creek near its mouth. Pumps were placed there, and the water lifted and discharged into the river *below* the intake tower. The result was magical. The typhoid death rate immediately declined. It was the end of the epidemic.

No more emphatic experiment has ever been carried out on human beings than demonstrated by this epidemic, of the danger of drinking polluted water. The sharp decline in the epidemic is clearly shown, graphically, upon Mr. Moore's excellent chart.

In 1895 the waterworks were moved up to their present site, The Chain of Rocks; and again on the chart you will note the steady decline in the death rate until, in 1899, the lowest point ever reached in the history of the city is recorded.

In January, 1900, the Chicago drainage canal was opened, and all the putrid and diseased filth of nearly 2,000,000 people discharged into the Illinois river and to the St. Louis water supply. Note the steady rise in the typhoid death rate as indicated by the chart. He emphasized the fact that the water at the present intake is a mixture of waters from three great watersheds, and that it fluctuates not only from day to day, but from hour to hour, the character of the water depending upon the amount of rainfall on the respective watersheds. A remarkable example of this occurred in February, 1900, shortly after the opening of the Chicago drainage canal, at which time the waters of the Illinois river entered the intake of the waterworks. Early in February the three rivers were covered over with ice. A thaw occurred in the Illinois valley, breaking up the ice on the river and sending great volumes of dirty black looking water down the river. The Mississippi and Missouri watersheds were not affected by the thaw until later, and those two rivers remained frozen over. The inky Illinois river water reached the intake tower and prevailed there from February 12th to 20th. This was demonstrated not only chemically and biologically, but could be seen with the unaided eye in samples collected at various points along the three rivers, the intake and in the tap water. Typhoid fever increased within the incubation period of fourteen days, and for March, 1900, one hundred and seventeen cases of typhoid fever were reported to the health department—the greatest number of typhoid fever cases ever recorded for March in the history of the city.

To Mr. Benj. Schnurmacher, city counselor, and especially to Mr. Claflin Allen, associated city counselor, must be given the great credit of having brought about the gigantic biologic and chemic investigations carried out upon the waters of Lake Michigan, the canal, and the three great rivers.

We have heard the reports of the city chemist and the city bacteriologist as to the results obtained before and since the clarification methods of Mr. Wixford were introduced. It is well to get clearly in mind what these two sciences can afford us in reaching a conclusion as to the potability of a given water supply.

Chemistry, by the estimation of the quantities of chloride of sodium and of nitrogen as free and albumenoid ammonia, can assert that a water is sewage-contaminated, but whether of man, or other animal origin, it cannot tell. Further chemistry tells us nothing of disease-producing organisms in a water. It is, therefore, of very little value to us in arriving at a conclusion as to the healthfulness or unhealthfulness of the present supply.

Bacteriology can estimate, approximately, the number of bacteria in a given water, and as to the numbers of bacteria before and after treatment by clarification or filtration. It may be able, after finding the so-called mythical "index of sewage pollution" to declare that a water is sewage-contaminated; but inasmuch as it is unable to find the typhoid bacillus in a water, it is no more able than chemistry to assert positively that a given water contains the germs of this disease, or the contamination comes from man or other animals.

There are two known water-borne diseases—typhoid fever and cholera. Cholera is out of the question in this country. There remains typhoid fever; and neither chemistry nor bacteriology, nor both together, can detect the germ of this disease in water. They are, therefore, of little value to us in reaching a definite conclusion as to the disease-producing qualities of the present supply. This being so, have we any other method of arriving at a positive conclusion? We have. Test the water by making an animal susceptible to the disease drink it, and see if it produces the disease. Man is, however, the only animal susceptible to the disease. For now a year or more a gigantic experiment has been carried on by the water department upon 700,000 human beings with the clarified city water. What is the result? The graphic chart and Mr. Moore's conclusions show. All who can see, can read it clearly written there. Among the 6 or 7 per cent. of bacteria which remain in the water after treatment, the typhoid fever bacillus still lurks.

We are all deeply grateful for what has been accomplished in the purification of the water supply by our able and energetic water commissioner, Mr. Ben Adkins; and I, for one, wish to congratulate him, not only for what is so far gained, but for the promises of betterment in the future. I believe that he and his able assistants will leave nothing undone to solve the problem of producing a clear and potable water out of the dangerous and ever-changing, tricky Mississippi water.

The sanitary intelligence of a community is estimated by its typhoid death rate, and, although we have not yet arrived, we are approaching that goal of intelligence.

Dr. W. C. G. Kirchner had occasion to make examinations of this water before the present system of clarification was instituted, and he had noticed the character of the water before it reached the intake. The visual tests conform in a measure to the bacteriological tests. The Missouri water containing much sediment is very turbid, while the Mississippi water is comparatively clear, and the mixture of the two streams can readily be seen. The Mississippi water hugs the Illinois for a considerable distance and at the intake the mix-

ture was not always complete, so that sometimes we got more Mississippi and sometimes more of the Missouri water. There were also seasonal changes which modified the character of the water. It had been shown that in the clarification process definite proportions of chemicals were used depending upon the character of the water, and it seems essential that it would require a competent corps of men to see that the process was properly carried out. It was due the community that such a corps be established.

The quality of the water is best shown by the typhoid fever statistics. No satisfactory method for the isolation of the typhoid bacillus has as yet been established. Vaughan of Ann Arbor has isolated from suspicious water bacilli of the venenosus group and by the use of biologic tests has been able to determine more definitely the character of the water.

In the bacterial purification of water, copper sulphate has been employed and its use in conjunction with iron sulphate process may be of some value. George T. Moore of Washington had undertaken to rid water of algæ and had found one part of copper sulphate to 100,000 parts of water sufficient to kill typhoid germs in from three to five hours in summer; in the cold this could not well be accomplished in less than twenty-four hours.

Dr. Albert Merrell was very glad to recognize the vast superiority of the method demonstrated in the proper clearing of water. As to the copper sulphate, that was not a new thing. He happened to know of one city where copper had been used for the past eleven or twelve years in clearing the water. They used copper rods rotating in contact with each other while the water flowed over them and the results were claimed to be very beneficial. It was not known in the community that this method was used, however. The city of St. Louis was to be congratulated on the progress made in a comparatively short time, but it should not stop where it was. There were many points, the foulness of the reservoirs, for instance, that would have to be eliminated before it would be possible to have anything like a perfect condition. Nevertheless, it was a distinct advance and a matter for congratulation, and he thought it was justifiable to hope for still greater progress as time went on.

Dr. Robert M. Funkhouser said he had heard a statement made a number of times, and the statement had been made to him a few days before by a gentleman who dealt in fish, that he had recently lost 1,500 fish, and the question was whether it was a coincidence or whether the present water supply had anything to do with the death of these fish.

Dr. Grindon said he wanted to tell a fish story, too.

While the daily papers were telling about the fish dying all over the city he received a phone message from Dr. Higgins, living out in the county. He stated that in a pond in the country the carp had all died, although it was far removed from the water supply of St. Louis. Possibly there was an epidemic among fish.

Mr. Wixford, in closing, said this winter had been a very severe one and many of the lakes had frozen to the

bottom, and many so thoroughly that the fish did not receive any air, and when the thaw came the lakes were covered with dead fish. In regard to the action of free lime upon fish he had learned from Dr. Marsh, who came here from Washington, that he could not hatch his shad or brook trout in water that contained ½ grain of lime to the gallon, but a ¼ of a grain had no effect upon them whatever. But there was no necessity for free lime in this process. It was possible to get nice clean water without that. The test for lime was a very simple one, merely a little silver nitrate added to the water would show the presence of free lime. As to the addition of copper sulphate with the iron sulphate, all the experiments had been upon reservoirs in which there were a great many algæ, and it took some time for this to be absorbed by the vegetable matter. To put the copper sulphate right in with the iron would not give it time enough. A separate solution of the copper sulphate might be added at the intake tower and then let it meet the iron, which would not materially influence the action of the copper sulphate, and follow with the lime at the *delivery* well. The system was not yet perfected for this treatment. The mud continued to accumulate in the basins. If enough copper sulphate was added there might be a mass of dead germs in the bottom of the basins. It would be better to have the present biologic process going on. It was not a good idea to have dead and decomposing matter in the bottom of the reservoir. Water containing few bacteria would be preferable to water made perfectly sterile and containing an antiseptic. If the people wanted an antiseptic in their drinking water it were better to let them put it in for themselves. It was quite possible that the accumulation of a great amount of decomposing matter in the bottom of the basins might not cause trouble, but to try it on 600,000 people was a rather serious problem. After killing the bacteria there would be the decomposing mass to deal with, and it would be necessary to keep on dosing it to keep it dead all the time. In large lakes in which the mud accumulated, the bottom was simply a mass of germs, but it would not be advisable to kill all that. Talking about human sewage, when one had fish in water the excreta could be seen passing through the water, and if the biologic process going on there were stopped the water would soon be as foul as any other water. It would be an ugly thing to kill all the fish in the basin. There was no objection to live fish. It was the biologic process that did the work. If a broth filled with cholera germs were passed through a Pasteur filter, nobody would drink that broth for fear of the ptomaines that might be present. Or, if such a filter had patches of typhoid or cholera germs on it, no one would drink the water passing through it. Ptomaines were simple alkaloids like other alkaloids, and they had to be taken into consideration in connection with this subject. He did not believe any disease germs could live among the millions and billions of saprophytes that gather in the bottom of the basins or on the top of a filter, but he did believe there would be objection to introducing an antiseptic. The use of 1 part of copper sulphate to 100,000 parts of water would pretty

nearly treble the cost of the present method.

Mr. Wixford added that he wished the members of the Society would visit the Waterworks and see what was really being given the city.

TUBO-ABDOMINAL PREGNANCY, ASSOCIATED WITH PAROVARIAN CYST AND MYOMATOUS UTERUS.*

By F. J. Taussig, M. D., of St. Louis.

In many respects the following case of tubo-abdominal pregnancy, complicated with other conditions, presents unusual features.

Mrs. J. S., aged thirty-five years, colored, had been married seventeen years without having ever become pregnant. Her menstruation had always heretofore been regular—3 days in duration, but accompanied by severe pains. She came under my observation May 13, 1904. She had had an attack about ten years previously that the doctor called "womb trouble," characterized by pains in the back and lower abdomen, and a fever. She was sick for about a month at this time. The treatment consisted of rest and hot douches. Since this time she had had occasional bearing down sensations and backache.

The present trouble dated from January. Her menstruation occurred at the regular time—about the middle of the month—lasted three days and was accompanied by cramping pains. Toward the end of January and during February she suffered from nausea and vomiting, worse in the morning hours. Her periods in February were more profuse, prolonged and painful. Since then she had suffered off and on with severe cramping pains in the abdomen. No vertigo or fainting spells.

* Read before the St. Louis Medical Society, April 22, 1904.

In March there was again a menstrual bleeding, prolonged in duration (five days). In April, on the other hand, the bleeding was scanty, lasting only one entire day. For the past two months there had been a foul-smelling, at times blood-tinged discharge.

Lately there had also been considerable burning and pain on urination, but no increased frequency. Particular trouble had been caused by the persistent constipation. Purgatives gave only temporary relief and the pain and tenesmus on defecation was very severe.

On physical examination the patient appeared to be in fairly good general condition. Heart-sounds normal. Breasts showed no colostrum or other changes of pregnancy. Abdominally a rather firm, somewhat tender mass could be palpated, rising out of the pelvis and partly filling the hypogastric and right inguinal regions.

On vaginal examination there were no evidences of inflammatory lesions about the external genitals. Bimanually it was ascertained that the cervix lay high up, close to the symphisis, pointing downward. It was partly softened, not tender, and fixed in its position by masses posteriorly and to either side. The fundus could positively be distinguished from these masses by its connection with the

cervix and firmer consistency. It lay anterior, pushed two finger's breadth above the symphisis in the median line, adherent, not sensitive, apparently somewhat enlarged. Upon its anterior surface could be felt a small, hard nodule, the size of a hazelnut, which was taken to be a small fibroid.

Filling the entire cul-de-sac, pushing the uterus upward and bulging the vagina downward, almost to the introitus, could be felt a fluctuating tumor, immovable, not very tender, about the size of a child's head. This tumor could be separated from the uterus but could not be outlined clearly from masses lying higher up on either side. On the right side there was some tenderness. There was a blood-stained, stringy, rather profuse vaginal discharge. Temperature 98.4, pulse 80–90.

The diagnosis was made of tubal pregnancy with myomatous uterus, and the patient advised to undergo an operation.

On May 20th a laparotomy was performed at the Provident Hospital. On opening the abdomen a few old blood-clots were found clinging to the omentum, which was adherent to the pelvic mass. The ectopic gestation sac, together with uterus tubes and ovaries, was found to be imbedded in adhesions. The uterus lay anterior, the tubes apparently not directly involved to either side, and in the cul-de-sac lay the unruptured fetal sack with placenta adherent to its peritoneum. It was evidently impossible to lift out the sac without rupturing, so the intestines being protected by gauze the sac was ruptured, placenta and fetus extracted as quickly as possible, and a large, firm gauze pack placed against the raw peritoneum, to which the placenta had been adherent. In this way the loss of blood was inconsiderable. The oozing ceased in a very short time. The quantity of amniotic fluid in the fetal sac appeared to be rather small. Its physical characteristics could not be distinguished owing to admixture with blood.

On the right side a parovarian cyst, the size of an orange, that had heretofore been beyond the reach of the palpating fingers, was now to be seen adherent to the base of the broad ligament. Both tubes and ovaries were imbedded in adhesions and the uterus was, as expected, studded with numerous myomata. In view of these circumstances, and the large raw surface left posteriorily, it was decided to do a panhysterectomy with free vaginal drainage. This was accomplished without futher difficulty and the vesical peritoneum sewed to the rectal peritoneum at a point near the sacral promontory, in this way closing off the entire pelvis for purposes of drainage. The abdominal incision was closed in layers.

The patient made a good recovery, the highest temperature being 100 6-10°, just previous to the removal of the drains on the sixth day. She sat up in bed on the fourteenth day and was out of bed on the twentieth day. The abdominal incision healed by first intention.

During July and August, although the patient was in the best of physical condition, she developed a state of mental depression verging on melancholia. The thought that she had lost a child by the operation seemed

to weigh on her mind. Gradually, however, she got over this spell and when she left for the South, in September, she was in the best of spirits, and the pelvic examination at this time revealed no exudate or tenderness. There were a few symptoms of premature menopause, such as headaches, "hot flushes," etc., but none severe enough to cause her special inconvenience.

The specimen removed was preserved by the Kaiserling method. It shows the following peculiarities:

The 20 cm. long, well-preserved female fetus, is attached to the placenta by a long umbilical cord. Upon its head and back are blood-stained areas corresponding to the points at which it broke through the membranes and lay directly exposed to its fibrinous sac.

The placenta is unusually large and heavy, weighing but 40 grams less than the fetus. Its maternal side is convex and perfectly smooth. There are many old and fresh hemorrhages in the intervillous spaces. The fetal side is concave and irregularly nodular. The fetal membranes extend for some distance beyond the placental margin, but even allowing for the fact that a small portion of them may have been torn off, they are insufficient to have wholly inclosed the fetus.

Coming next to the uterus, we find that organ enlarged to a 12 cm. long, nodular body, whose cavity measures 10½ cm. and is filled in its upper portion with fresh blood, whereas the cervical part is dilated by an older blood-clot. The uterine mucosa owing to the decidual changes has a yellowish-white color and is markedly thickened. At some points it measures over 1 cm. It is somewhat irregular and very soft. The fibro-muscular coat is also greatly thickened and contains a large number of myomata, varying in size from an apple-seed to an acorn. The largest projects upon the center of the posterior wall. In the peritoneal coat there are also several smaller myomata, one of which proved, microscopically, to be a cystic adenomyoma. The surface of the uterine peritoneum is enlarged by the numerous points at which adhesions formed. Some of these going from the uterus to the left tube can still be seen.

The left tube and ovary are not much changed. There is some thickening of the tube and the ovary shows points of hemorrhage. Between the two could be seen a parovarian cyst, the size of a pea, which was removed for microscopic examination. There is also very beautifully demonstrated a cystic hydatid of Morgagni.

On the right side the tube is markedly thickened and somewhat tortuous. Its fimbriated extremity is flattened out to an area covering almost the palm of one's hand. At no points over this dilated fimbriated end can pieces of placental tissue be found. Immediately beneath the fimbria lies a parovarian cyst, the size of a small apple, and the right ovary lies beneath and perfectly independent of this cyst. It shows no special abnormalities. A corpus luteum could not positively be identified in either ovary.

In view of the fact that both tubes and ovaries were to all appearances free of direct connection with the gestation sac and that microscopically only decidual and no fetal elements

could be found in them, the question naturally arises: Was this not perhaps one of the rare cases of primary abdominal pregnancy? If we consider the fact that in this case the hypertrophic fimbria ovarica of the right tube lay closely approximated to, if not in direct contact with, the placenta the question should, I believe, be answered in the negative. In this connection it may not be amiss to quote from the most recent textbook on obstetrics (von Winckel's Handbuch der Geburtshilfe, Vol. 2, p. 771.)

"A further instance in the list of anatomical findings, that may simulate a primary peritoneal site of pregnancy is the recent discovery of pregnancy in the fimbriated end of the tube and particularly gestation of the fimbria ovarica. In gross anatomical relations we have here in fact the closest resemblance to the condition that must arise in the further development of an ovum implanted directly upon the peritoneum of the surrounding pelvic structures and only by careful consideration of the syntopie of placental site in relation to the adnexa and its histologic character can a differentiation take place. Thus it is very likely that a great many so-called primary abdominal pregnancies in reality take their point of origin from the ovarian fimbria." Possibly in further sections through the ovarian fimbria I may come across some fetal elements that will positively answer this question. Even should I fail in this, however, the anatomical relationships in the case were such that an assumption of primary abdominal gestation would hardly be justifiable. Particularly must we come to this conclusion since the closer study of the cases thus far reported show that none of them will stand the light of closer criticism.

The microscopic examination which has not been wholly completed, developed a number of interesting problems in the formation of decidua to be reported on a later occasion.

From the history of the case and the pathological findings, the following sequence of events may be deduced: At a period not long after her marriage the patient developed inflammatory trouble of the adnexa which certainly to some extent interfered with conception. During seventeen years of married life she had never become pregnant. Finally in January, 1904, an impregnated ovum found a nidus upon the ovarian fimbria of the right tube. As it grew larger the blood supply over this area became insufficient and the chorisonic villi sought to gain nourishment from the surrounding peritoneum of the cul-de-sac. As bladder and rectum became compressed by the growing mass, symptoms on the part of these organs developed and these it was, together with the unusual bloody discharge that made the patient seek medical assistance.

To summarize the points of special interest in the case, we have:

(1) Pregnancy developing from the fimbria ovarica along the peritoneum of the cul-de-sac.

(2) The presence of an intact uterine decidua of considerable proportions.

(3) The association of ectopic gestation with cystic degeneration of the remnants of the Wolffian ducts as in the two parovarian cysts and the cystic adenomyema.

(4) The association with numerous fibromyomata of the uterus.

MIXED-CELL HYPERNEPHROMATOUS TUMOR OF THE KIDNEY, ASSOCIATED WITH CALCULUS PYELONEPHRITIS.*

F. J. Taussig, M.D., of St. Louis.

The history of the patient in whom the above unusual condition of the kidney developed was as follows:

Mrs. S. S., aged forty-two, first came under observation in November, 1902. She had had eight children and two miscarriages, the last conception having occurred two years previously. For the past eight or nine years she had suffered from pain and burning on urination and increased frequency, and for the past year she had observed that the urine was cloudy and contained "lumps." She said that at times she had seen a trace of blood, but had never had any prolonged hematuria. No history of the passage of a stone. She had had some fever with her last four childbirths, and occasionally suffered with backache, pain in lower abdomen and a leucorrhœal discharge. Last menstruation two months previous. The symptoms for which she sought relief had never wholly incapacitated her from work.

Examination at this time revealed sensitiveness over the base of the bladder. The kidneys were not tender or palpably enlarged. The uterus corresponded in size to a two months' gestation. The urine was slightly acid, was loaded with pus and epithelia and contained no blood or casts and 1-10 per cent. albumen. No tubercle bacilli found, but large numbers of other bacteria. Under frequent boric acid and silver nitrate (1-1000) irrigations the cystitis began to clear up. Only a small quantity of pus was present two months later. Symptomatically she was also greatly improved.

As the time neared for her confinement the patient had on several occasions rigors and some fever. Finally, on June 17, 1903, I was called to her house, and found her suffering with pains in the right kidney region and a high fever, 105°, following upon a hard chill. Labor pains set in that night, and a full term child of eight pounds was born the next morning without any difficulty. On that day and the five succeeding ones her temperature ranged from 103° to 105°, pulse 110 to 120, fairly strong and regular. Antipyretics and cold sponging had but little influence. The urine from the commencement of this attack was again loaded with pus, and there was considerable vesical tenesmus. A temporary paresis of the bladder necessitated catheterization for five days. Delirium, and at times a semi-comatose condition, developed, so that her family gave her up for lost. At no time were there the slightest symptoms indicating infection of the uterus nor was the kidney at this time palpably enlarged, though it was somewhat tender. A diagnosis of right-sided pyelitis was made, the patient placed on a bland diet and given urotropin. The symptoms rapidly subsided after the first five days. The temperature remained normal, and in two weeks more the patient was able to be up again. Relieved from the weight and congestion of the pregnant uterus, the cystitis also began to clear

*Read before St. Louis Medical Society April 22, 1904.

up. Outside of semi-occasional pains in the region of the right kidney, the pyelitis gave rise to but little disturbance. Helmitol and urotropin were given interchangeably, and at times when the pus became more abundant a boric acid vesical irrigation was employed. In this way matters went on, the patient remaining in fairly good condition from July, 1903, until the fall of 1904. Occasionally there would be a rise of temperature to 101-102°, associated with pains in the right side and an increased pyuria. At no time was anything passed suggestive of a stone, nor was there at this time any hematuria.

Finally, on September 27, 1904, I was hurriedly summoned, and found the patient suffering excruciating colicky pains in the right side, so that I was compelled to give her opiates. Her temperature was 103°, pulse 110. The following day she had an even more severe attack. When I arrived I found that the patient had passed a stone about the size of a thumb-nail and an enormous quantity of pus and necrotic kidney material. I show in this bottle two of the largest of these masses. They were, when passed, approximately the size and shape of a small finger, and as the microscopic examination revealed, were composed of a mucoid material coated with pus and necrotic epithelial membranes. There were no evidences that the expulsion of this material had caused any further injury to the lower portion of the urinary tract. Some tenderness and thickening of the right ureter had been noted on several previous vaginal examinations. Now, this thickening was very marked. Abdominal palpation revealed for the first time a mass in the region of the kidney the size of a child's head, semi-fluctuating and very tender on pressure.

The patient was removed to Mullanphy hospital, and as the temperature fell to normal and the mass of the swelling slightly decreased the operation was delayed for a week to get the patient in better general condition. On October 1, together with Dr. Crossen, I made a cystoscopic examination with ureteral catheterization. The left ureter was catheterized, but the orifice of the right one was seen to be plugged with a mucopurulent mass that interfered with the introduction of a ureteral catheter. From the left side was obtained 45 cu. cms. of a clear urine in which microscopically could be seen no pus, bacteria or casts. The freezing point of this urine was —1.12°C., *i. e.*, within the range of a normal urine. An ordinary catheter was placed in the bladder to collect the urine from the other side if any should be passed. Through this was obtained 4 cu. cms. of fluid loaded with pus and epithelia. The total quantity of urine in twenty-four hours, measured on several occasions, varied between two and three pints.

On October 5 a lumbar incision was made on the right side. Owing to the size and nature of the kidney tumor it was found inadvisable to do a primary nephrectomy. An incision of two and one-half inches was made through the kidney substance to the pelvis and about a pint of foul-smelling pus washed out. Several minor pockets were also opened and a large gauze drain inserted after the kidney had been anchored to the skin. A portion of the kidney cortex removed for

microscopic examination revealed nothing that could not be explained on the basis of a simple pus infection. It was later recalled, however, that a few peculiar yellowish spots were observed in the kidney substance. The patient made a good recovery for a time, but toward December the quantity of pus discharging through the lumbar fistula began to increase again, together with a return of the pyuria. In consultation with Dr. H. Mc. Johnson the removal of the kidney was decided upon.

On January 7, therefore, I performed an intra-capsular enucleation of the kidney. The result was very satisfactory. In three weeks the large wound had almost wholly closed. At the present time the urine is free of pus and albumin, the bladder gives rise to no symptoms and the infiltration about the ureter is diminished. Cystoscopic examination in March showed an apparently normal bladder mucosa. The patient has gained twenty pounds in weight and feels well.

The specimen removed consisted of two pieces, which, together, approximated in size that of a normal kidney. Only a portion of the pelvis was removed, and its connection with the different calices could not be followed in every case owing to the extensive scar-tissue formation.

On section the kidney presented a variegated appearance, as the portion in this specimen jar, prepared by Kaiserling's method, will readily show. The epithelial lining of the pelvis and calices was infiltrated with blood, and at various points in the kidney there were larger or smaller hematomata. The yellowish areas proved on section to be hypernephromata. In some places also you will notice translucent yellowish areas resembling in appearance fat. On microscopic examination this assumption was found to be correct. While it would take too long to consider on this occasion the various interesting phases in the microscopic study of this tumor, I can state that only a small amount of genuine kidney tissue was left, and this had undergone degenerative changes. Beside hypernephromatous and fatty tissue there were found unstriated muscle, fibres, new-formed fibrous tissue and lymph-nodules with typical follicles. A section showing some of this conglomeration of tissue is placed under the microscope. Although a large number of sections from various portions of the tumor have been studied microscopically, I am not yet prepared to give a detailed description of the nature of the pathologic changes involved.

To summarize the interesting features of the case we have:

1. A cystitis of long standing giving rise at the conclusion of pregnancy to an ascending pyelitis. Such cases of pyelitis in pregnancy are unusual, and involve many interesting points of treatment.

2. Development of a renal calculus which, at the time of its expulsion, caused the sloughing of a large portion of the lining of the kidney, pelvis and upper ureter. This material was expelled in the form of several ureteral casts the size of a finger.

3. Association of this condition with hypernephromata.

4. Presence of lymphatic, muscular, fibrous and fatty tissue within the kidney substance.

Discussion.

Dr. Henry Jacobson, in discussing the last paper, thought that the doctor could have assisted his diagnosis by making a ureteral catheterization early. He should have tried the x-ray. In 98 per cent. of cases the x-ray was an accurate method of diagnosis. In very stout persons, or where there was a calcareous deposit in the walls of the veins near the kidney, it might lead to a mistake. Under chloroform he might have made out the presence of the tumor somewhat earlier, or he could have used phloridzin injected subcutaneously, and then, by examination of the separate urines, ascertained whether the suspected kidney was functionating properly. He supposed that the nature of the tumor was a mixed one, that it was a myomata-hypernephroma in combination with calculus pyelonephrosis, according to the microscopical examination.

Dr. N. B. Carson referred to a case of pyelonephrosis, in which he had failed to make the correct diagnosis before operation. The patient entered the hospital with a large abdominal tumor with a history of gonorrhœa of some months' standing, and his physician had been passing sounds. At his last visit to his physician a sound had been introduced, and following this there was a passage of blood. When he entered the hospital the tumor extended from the border of the ribs to the crest of the ilium and over the median line. Examination of the urine showed considerable pus, and it was thought there was a pyelonephritic infection extending from below upward, from the gonorrhœal attack. Pressure upon the tumor did not increase the flow of urine. Examination with the fluoroscope or x-ray was not made. The question was whether it was a cystic hypernephrosis, a pyelonephrosis, an encysted tubercular peritonitis or a sarcoma of the omentum or intestine. A median incision was made and the tumor found on the inner side of the colon with very thin walls, and on making an incision there was a free discharge of pus and urine. It was decided that the kidney was the seat of the trouble. After breaking up the general adhesions there was removed a pyelonephritic kidney the size of an adult head. The cyst contained a gallon of fluid, and microscopic examination showed the kidney substance to be entirely destroyed. An interesting feature of the case was that just at the beginning of the ureter there was a hard tumor about the size of the thumb. The character of that tumor had not yet been decided.

Dr. Taussig, in closing, said that inasmuch as the patient was very stout an x-ray photograph would have been very difficult to obtain. The phloridzin test was thought of, but since it has value merely in comparing the healthy with the diseased kidney, and since practically no urine was obtained from the diseased kidney, it was not made. The diagnosis of a normal left kidney was based almost entirely on the absence of pus and bacteria from that side and the quantity of urine in twenty-four hours.

CONSTIPATION AND ITS RELATION TO DISEASES OF THE RECTUM.*

By W. H. Stauffer, M. D., of St. Louis.

My only excuse for presenting this subject this evening is to elicit your opinion based upon your experience in efforts to overcome a prevalent symptom often complicating both acute and chronic diseases.

The general practitioner as well as the specialist is frequently confronted with this condition, as every part of the body is influenced by defective elimination. I have no new method of treatment to suggest, as I am not a stockholder in any chemical company or trade journal.

The terms constipation, obstipation and fecal impaction are frequently confounded and a proper conception of the meaning of each is necessary in the outset of our discussion. By constipation is understood a condition of insufficient and tardy fecal passages due to functional conditions or diseases of the intestinal tract. Obstipation refers to those conditions in which there is a sufficient quantity of fecal material and adequate functional activity, but in which there exists some deformity, growth or contracture in the intestinal tract that causes mechanical obstruction to the passages.

By impaction is understood an accumulation of fecal material usually hard, dry, and stuck together in a mass, which is arrested at some point through an organic or spasmodic narrowing of the intestinal canal. The symptoms of the above-named condition so often overreach one another that it is almost impossible to clearly separate them, but an intelligent use of each term implies a knowledge of the cause of the existing condition.

It must be borne in mind that what constitutes constipation in one person may not be so in another, for occasionally one does well with only one evacuation every second day, while a large majority require daily defecation in order to maintain perfect health.

Regularity without effort, and the discharge of fecal material proportionate to the amount of food consumed are the essential requisites of normal defecation. The impairment of either of these features in the line of inadequate amounts or prolonged retention requiring increased effort to obtain a passage, constitutes constipation. When these have been determined, a search for the cause should be instituted. Careful inquiry, abdominal palpation, and digital and instrumental examination are all necessary to come to a proper diagnosis in such cases.

In all common cases the symptoms accompanying constipation are debility and lassitude, while more or less mental depression is present in persons of nervous or hypochondrical temperament. When it occurs in the course of chronic insanity, it increases languor, moroseness and irritability of temper, and not infrequently excites acute and violent symptoms.

Not only do we have from constipation a poisoning of the system from

* Read before St. Louis Medical Society, April, 1904.

absorption of the liquid and gaseous contents of the bowels, the ptomains or poisons developed in them from fermentation producing depressing effects on the nervous system, with derangement of the stomach and assimilative organs, as shown in pale faces, debility, neuralgia and headache, but we get in addition, from accumulated forces in the rectum, uterine displacement, with its consequent disturbances in the pelvic circulation, and with its general reflex neuroses. Gynæcologists know well that the left ovary is more often diseased than the right one. The left ovarian vein has no valves, and a slight pressure upon it prevents its emptying. Doubtless the pressure of a loaded rectum in this event is a prolific cause of ovarian disease, especially on the left side.

To relieve this condition we must not rely on hot douches, iodine or glycerine applications, but relieve the engorgement of the ovarian veins by the emptying of the rectum.

Constipation may result from one or more of the following causes which are related to diet, and which need only to be mentioned to be appreciated: (1) Insufficient quantity of solid food; (2) too highly nutritious or concentrated food; (3) insufficient liquid; (4) astringent food and drinks; (5) indigestible food; (6) lack of digestive fluids; (7) irregularity in diet; (8) obstruction from overeating; (9) lack of peristalsis; (10) lack of exercise.

A very common cause of constipation is the failure to adopt and persistently maintain a regular time for daily defecation. Instead, many persons frequently resist a desire to evacuate at the regular time, from pressure of other engagements, and thus the nerves of the rectum become habituated to the contact of fæces and cease to renew the desire except at long intervals.

The power of the will must be made available, and due attention must be given to a function so essential, the proper performance of which is so necessary to health and comfort. In order to avoid the inducements to leave the closet too soon, the too frequently disgusting conditions of these should be remedied.

More attention than is usually given to places of public comfort is essential for reasons of decency and health, as well as for the avoidance of widespreading zymotic diseases. One has but to visit our large factories or department stores during the noon hour, where not infrequently one closet is supposed to accommodate from fifty to one hundred employes during the time granted for lunch, to be convinced that the work of our health department is not yet completed. It is to be devoutly hoped that the New St. Louis will be equipped with places of public comfort worthy to be compared with those of some of our eastern cities and all places of note in Europe. With the closing of the saloon on Sunday, the only places available to many, and especially to our street car men and coachmen, has been denied. The demoralizing and humiliating influence on one who is not accustomed to frequenting the saloon, to meet a pressing engagement, is worthy of our consideration. Decent, inodorous and ornamental toilet accommodations are better evidences of civili-

zation and refinement than statues and monuments so commonly used for decoration.

The act of defecation is ordinarily looked upon as a disagreeable nuisance, to be avoided when possible, and to be hurried through with or incompleted when necessity arises. No wonder a function which, normally, should be a real pleasure and productive of a sense of comfort and well-being, becomes an irregular, straining, pile-producing effort.

The rectum being filled with fecal matter produces a continued contraction and eventually a hypertrophy of the sphincter.

In such cases constitutional treatment will not correct constipation, but local treatment must be instituted to relieve said constipation.

You have but to recall the veinous supply of the rectum to be convinced of the baneful effects of constipation on this part of our anatomy. The veins of the rectum return the blood through two entirely different channels. The internal or superior hæmorroidal veins collect the blood from the rectum proper and empty it through the mesenteric vein into the portal circulation. The middle and external hemorrhoidal, and the middle sacral veins collect the blood from the external surface of the rectum and empty it into the general circulation through the vena cavæ.

The treatment of constipation is by no means a simple proposition, and success will depend upon the intelligent study of each case. The medicinal treatment is exceedingly unsatisfactory. It often causes it and delays recovery by establishing the habit of response to an irritant. Drugs should only be used as aids, and when all other methods have been exhausted. It is safe to say that the bulk of the drug trade centers about aperients, laxatives, cathartics and purgatives exploited by the commercial enterprise of proprietary medicine men, self prescribed by the laity or druggist, all for the relief of chronic constipation.

Much has been said as to the efficiency of various drugs employed in the form of enemata. Most of them act as local irritants, and as soon as the rectum becomes accustomed to them are of no more value than the ordinary injection of warm water.

Massage of various kinds and methods are of undoubted value, especially when there is atony of the muscular coat of the intestines with deficient peristaltic action and consequent disturbance of digestion. That benefit is more likely to follow here from repeated treatments than as an immediate effect would show that the nerve centers that preside over these functions have undergone a nutritive change which has taken time to produce, and hence that the improvement would most likely be lasting. Moreover, when the alimentary canal is distended by gas, or overburdened by solid contents, the nutrition of its walls must suffer from languid circulation, as any muscular organ would that was continually stretched and inactive. Massage improves the circulation and pushes along the contents of the stomach and intestines at the same time, besides directly stimulating the muscular fibers to contraction, and reacting on the nerve centers, thus improving function and organization in various ways.

For habitual constipation Doctor Sahlis, of Berne, advises his patients to roll a five-pound cannon ball upon the abdomen for five or ten minutes every morning before rising. In this way he has cured nearly all his cases of torpid bowels without medication. When universal peace comes, the orator can, therefore, speak not only of turning swords into ploughshares, but also cannon balls into aperients.

And peace will then have its victories no less renowned than war.

Much better than using cannon balls in obstinate cases of constipation is to instruct patients to percuss their own abdomen with the ulna borders of their own fists, in the direction of the ascending, transverse and descending colon for several minutes night and morning. Patients will stand an amount of pounding this way from themselves that they would not from any one else short of a suit for assault and battery, and the effect is often admirable where laxatives and other means have failed.

The baneful effects produced by constipation on the rectum are caused; 1st, by defective elimination; 2d, mechanical interference to the return circulation; 3d, prolonged and often ineffectual efforts at expulsion of feces; 4th, irritation from the use of drastic cathartics and infection from septic nozzles in administering enemas of various kinds.

Hæmorrhoids, fissures and fistulas, and catarrhal diseases of all kinds are not infrequently caused by chronic constipation.

The various local diseases of the rectum are as frequent as those of the nasal passages, and the only reason they are not treated is because the proctologist is not as popular as the laryngologist.

Constipation is one of the prolific causes of the many painful affections of the rectum which can be relieved permanently if sought for and properly treated.

What is frequently a complication at first becomes a cause of very distressing symptoms, making life a burden rather than a pleasure.

Discussion.

Dr. Robert Funkhouser thought it was evidently the intention of the doctor to call the attention of the profession in a general way to the conditions present in such cases and, as he had indicated, it was necessary that the physician familiarize himself with the conditions present in each individual case. The cannon ball suggestion reminded him of the story of one of his patients who had told him, the day before, that she had suffered for a long time from constipation, almost obstipation, and that her physician had advised her husband to get a ten-pound cannon ball and that she roll it about on the abdomen. The woman was pregnant, though the attending physician did not recognize it, and had she gotten that cannon ball and rolled it about on the abdomen she would certainly have killed the child, but the eminent neurologist who was her physician, though he was consulted day after day, saw that the abdomen was growing larger, and that the feet were swelling and that there were other symptoms showing kidney complications, yet continued to urge the cannon ball idea. This subject was such a vast one, that even though the patient might be willing to submit to

the physician or surgeon, the results were not always all that could be wished. One point of importance that Dr. Stauffer had mentioned was the necessity for these places of comfort in different parts of the city. If the medical men would emphasize that point with the Health Department it would be a very good idea. Putting off to a convenient season the emptying of the bowel was a habit that grew upon one, and should be avoided.

Dr. Joseph Grindon said that whether one was a dermatologist, a laryngologist, an ophthalmologist or an omphalologist, one was always interested in the subject. All were agreed that whereas there were a hundred drugs that would bring about a movement of the bowels, there was no drug nor combination of drugs that would cure habitual constipation. Yet it was in most cases, he believed, curable. One thing of importance in certain cases was the avoidance of a heavy breakfast. A heavy meal called upon the stomach at once to meet the needs of digestion, and thus diverted the attention of the nerve centres from the rectum. A method had been called to his attention a number of years ago that had given good results in certain cases. It was a method of administering enemata not mainly for the purpose of emptying the bowel, but rather to furnish to the lower bowel a system of gymnastics, and at the same time to furnish a sufficient quantity of fluid. The patient was instructed to inject at bedtime such a quantity of water at body temperature as could be retained until morning without discomfort. Patients sometimes said they could not retain it, or would have to remain awake all night to do so, after the manner of the Irishman who, when asked by a friend why he looked so weary, said that the doctor had told him never to go to bed with cold feet, so that he had to sit up all night with his. But it would be found that at least an ounce or two of fluid could be retained at first and the amount could be gradually increased, until after a time the patient would be able to take and retain a quart or more at body temperature. After that the temperature could be gradually reduced until cold water was used. When the patient had reached the point where he could retain a quart of cold water, he was instructed to continue the practice for a month. In several cases of habitual constipation which had existed a number of years, this treatment had effected a cure. As to the cannon ball idea, it would seem quite possible in this way to force from the caecum into the appendix a small quantity of material that might cause an appendicitis.

Dr. Charles Shattinger said the cannon-ball could be recommended. Balls could be bought made of wood and hollow, and filled with shot up to any desired weight. There was no short-cut in the treatment of this condition, neither by ball-massage, the manner of giving an enema, or by special directions as to the time when defecation should take place. Faradism of the abdominal walls or rectum and, in severe cases, a spiral electrode passing up through a colon tube into the bowel, was effective treatment. When local causes existed in the rectum they would have to be attended to, but the rectum was not the

cause in the majority of cases, but the reverse, constipation causing rectal diseases. One of the causes was the prevalent habit of eating food not presenting enough residual bulk. We were so used to food masticated, as it were, by machinery, that bulk had to be supplied in some manner by bringing in foods containing cellulose, hence the fad of chewing grains of wheat or eating bran. The next most prolific general cause was weakness of the abdominal muscles; 50 per cent. of all women suffered from splanchnoptosis in some one of its varieties, caused or at least kept up by weak abdominal muscles. Exercises should be chosen, especially calling into action the abdominal muscles. The result would be first of all strengthening the muscles involved in the act of defecation and, second, improvement in the abdominal circulation.

Dr. L. S. Luton said the Civic Improvement league had at one time gone over this matter thoroughly and the corner of Grand and Franklin avenues had been considered for the erection of such a place.

Dr. Stauffer, in closing, said, in reference to large enemas, he thought that a Mr. Hall, in New York, had originated the idea some twenty years ago. Dr. Stauffer had a patient who had adopted the method and had never had a natural movement of the bowels since. The difficulty was in stopping the enemas; the patient must keep using more and more water or the bowel would fail to respond. Unless after the bowels moved, there was some other injection in the way of a lubricant it left a dry, burning sensation, frequently resulting in a catarrhal condition. He was heartily in accord with Dr. Kieffer and Dr. Moore on the advantage to be derived from eating a large breakfast.

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EDITORIAL.

SALUTATORY.

With this number, the JOURNAL OF THE MISSOURI STATE MEDICAL ASSOCIATION closes its first year. Twelve numbers with an average of sixty reading pages. Not only has the journal published the transactions of the association, but also papers, or abstracts of papers, from men best known in the medical world. One hundred and fifty-four reports of meetings of affiliated societies and two hundred and sixteen news items, thirty-seven editorials and sixty-eight original articles have appeared. Special thanks are due Drs. C. Lester Hall, F. J. Lutz, Woodson Moss, M. P. Overholser, Robt. T. Sloan and L. A.

Todd of the publication committee, also to my assistant, Dr. Chas. D. Cobb, and the assistant secretary, Dr. E. J. Goodwin, for their valuable assistance. Not only has the journal given all members an opportunity of knowing just what was done at the annual meeting and kept the doctors in different parts of the state in touch with each other, but it has furnished those medical men who never attend a *quid pro quo* for their annual contribution.

THE STATE ASSOCIATION.

The annual meeting of the State Medical Association was held at Excelsior Springs, May 16, 17, 18, 1905. In the history of the association there has been no meeting where the members were so enthusiastic. The idea of devoting the first day to the meeting of the legislative bodies met with general approval. The scientific program was unusually attractive and the attendance unprecedented in medical conventions in Missouri. That the presidency should fall to the country was generally conceded and the election of Dr. D. C. Gore, of Saline County, was unanimous. Drs. C. D. Avery, Lincoln County; J. P. Burke, Moniteau County; F. A. Glasgow, St. Louis; T. F. Lockwood, Bates County; E. Lowry, Clay County, were elected vice-presidents. Dr. C. M. Nicholson, of St. Louis, was elected secretary, and Dr. J. F. Welch, of Salisbury, treasurer. The association will meet next year at Jefferson City and the scientific work will be divided into sections. Dr. W. G. Moore, of St. Louis, was elected orator in medicine, and Dr. C. H. Wallace, of St. Joseph, orator in surgery.

The house of delegates passed a motion introduced by the secretary providing that each society should be invited not later than October 1, 1905, to appoint members to present papers at the annual meeting.

Three new councillor districts were added and Drs. Tefft, of Springfield, Shuttee, of West Plains, and Porterfield, of Cape Girardeau, were elected to preside over these.

If the Excelsior Springs meeting can be considered as a criterion the work of reorganization in Missouri has proved a great success.

JULY NUMBER.

In the next issue of the journal will appear the minutes of the annual meeting, reports of officers and a complete roster of the members of the State Association.

Lists of members of the different county societies have already been sent to the respective secretaries for correction. Any member who has not paid his annual contribution and desires to reinstate himself in his local society, as well as the State Association, should forward dues to the secretary of his county society without delay.

STATE ANATOMICAL BOARD.

The annual meeting of the State Anatomical Board was held May 17th at the Music Hall, Excelsior Springs.

Election of officers resulted as follows:

President—Dr. C. M. Nicholson, St. Louis.

Vice-President—Dr. Wm. Frick, Kansas City.

Secretary—Dr. C. M. Jackson, Columbia.

Treasurer—Dr. A. R. Kieffer, St. Louis.

The next meeting will be held at Jefferson City.

NEWS ITEMS.

Adrenalin Gauze.—The remarkable capillary contracting action of adrenalin has been utilized by a firm of antiseptic dressing manufacturers in Chemnitz, who are introducing surgical bandages impregnated with the substance, the whole being sterilized.

Roentgen has never been interviewed, has never been banqueted, and has refused immense sums of money for a book on what he styled "a new kind of ray"—in short, he is one of the least self-advertised of scientific authorities. The medical profession's reputation would be better had all his followers followed his example in this respect.

During the past ten years the number of students at the medical department of Columbia University, New York, has decreased from 779 to 560. The cause is the raising of the standard and the tuition fees. May the good work extend to all other medical departments and medical schools. All will be benefited by such treatment of medical education.

Ichthyol is a most valuable substance to reduce inflammatory swelling and in septic conditions affecting the skin. Its disagreeable odor is very distressing to many patients, but it can be concealed by the addition of oil of citronella, minims xx to the ounce of ointment. Oil of roses also does well, but is very expensive.

The Supreme court of Ohio, in a recent decision, holds that Christian Science healers cannot practice in the state without a license. The court stated:

"The giving of Christian Science treatment for a fee, for the cure of disease, is practicing medicine within the meaning of the statutes regulating such practice in this state. The statute making it a misdemeanor to give such treatment for a fee is not interference with the rights of conscience and of worship, and is not on that ground unconstitutional. Legislation prohibiting any one from treating a disease for a fee, excepting such persons as exercise the police power of the state, is constitutional."

In the fractures of young children do not look too much for crepitus. These fractures are apt to be on the line of union with an epiphyseal cartilage, and no crepitus can be evolved without the use of an unjustifiable amount of force.

COUNTY SOCIETY NOTES.

ST. LOUIS MEDICAL SOCIETY.

Dr. F. L. Henderson, President.
Dr. T. A. Hopkins, Secretary.

The St. Louis Medical Society has convened in regular session four times since April 21, 1905. The following reports, scientific papers and demonstrations have been presented:

At the meeting held April 22d, Dr. F. J. Taussig presented a "Report of Two Complicated Cases." The first was a case of "Tubo-Abdominal pregnancy, Associated with a Parovarian Cyst and Myomatous Uterus." The patient was a female, married seventeen years and had never given birth to a child. A diagnosis of extra-uterine pregnancy was made and at a suitable time, laparotomy was performed. A large mass extending from the cul-de-sac upward was found and examination of the mass proved it to be a sac containing a fœtus extending into the cul-de-sac. The placenta was attached to the peritoneum and was not directly associated with the uterus. One ovary was associated with a cyst and the uterus was irregular and somewhat enlarged. The case presented features which "lead one to question if it was not one of the rare cases of primary abdominal pregnancy. The second case was one of mixed-cell hypernephromatous tumor, following on a calculous pyelonephritis." The patient had given birth to eight children and had experienced two miscarriages. On nearing her next confinement she began to have chills, fever and pains over region of the left kidney. She passed a urinary concretion covered with pus and necrotic material and the urine contained a great deal of the same material; an operation was made and the kidney removed. It was increased in size and a large tumor mass was found at the upper border and merging into the kidney substance. The patient gave a history of a chronic cystitis and ascending pyelitis and the operation revealed the results on the kidney. Microscopic examination of the mass revealed a mixed cell tumor, considerable muscular tissue being present. Discussions by Dr. Jacobson and Dr. Carson, "who also reported a case of similar nature in his practice, only that a tumor size of thumb was found at the beginning of the ureter and the ureter was occluded at the site of the tumor."

At the meeting held April 29th, Dr. W. A. Stauffer presented a paper on "Constipation and Its Relation to Diseases of the Rectum." The paper treated of the practical methods of relieving long-standing cases of constipation, and the harmful effects resulting from lack of proper attention to free and regular evacuations of the bowels. He suggested the use of systematic exercise and massage to strengthen the abdominal muscles, regular diet, and especially a good breakfast and a regular time for going to stool, a time soon after the morning meal being preferable on account of the peristalsis which is set up in the full lower bowel, after digestion begins. The paper emphasized the fact that we should have convenient places, especially in the

down-town districts, for arranging the toilet, this being the more demanded on account of the recent Sunday closing order, and from the fact that every large and intelligent community should be provided with the proper conveniences leading to physical comfort and cleanliness.

The paper was discussed by many of the members, and it was deemed important and advisable that the society investigate the present conditions and see how much has been done and can be done in this direction. The matter was referred to the committee on public health and legislation.

At the meeting held May 6th, action was taken on the death of Dr. Robert Maurice King. Resolutions of condolence and sympathy were prepared and ordered presented to the family of the deceased, and tributes to his character and standing were made by many of the members, among them being Drs. Funkhouser, Ravold, Moore, Ball and Shutt, and Judge O'Neill Ryan. Judge Ryan had met and known Dr. King for many years, and he was an expert witness in Judge Ryan's court in many cases. Judge Ryan said, in part, that Dr. King was one of the few men whom he knew that held unbiased and intelligent opinions of technical medical points, and was always able to express himself in clear and intelligible terms. Dr. King graduated in medicine at the Jefferson Medical College in 1867, and had continued in medical pursuits up till the time of his death. He was an ardent supporter of any movement tending to increase the dignity, honor and knowledge of medicine. He was a teacher in the Beaumont and Physicians and Surgeons Medical Colleges for the past twenty-five years, the last ten years being devoted to obstetrics. He was one of the organizers of the Beaumont and Physicians and Surgeons Medical Colleges.

He was a man of high professional standing, and his integrity, honor and ability were unquestionable. He was always ready to stand for the right as his conscience told him; was an unfailing friend, and was ever giving encouragement and help to the young members of the profession. He filled numerous positions of honor and trust in civil and professional life, and was treasurer of the society for the past year and a half, having acquired an enviable reputation as a shrewd collector and financier. His books and accounts were found in perfect condition by the auditing committee of the society.

At the next regular meeting Dr. C. J. Orr was unanimously elected to the position of treasurer, left vacant by the death of Dr. King.

At the meeting of May 13th Dr. Homan, chairman of the committee for banqueting and entertaining the medical members of the General State Assembly, reported. The banquet was held at the Hotel Jefferson, May 10th. The society was well represented, and the function was a success in every particular.

Dr. Amand Ravold demonstrated a specimen of chylous urine. Examination of the patient's urine and blood did not reveal the "Filoria Sanguinis Hominis," and the condition was transitory, lasting only three or four days. The urine was distinctly cloudy, and cleared up on addition of small amounts of ether,

fat globules then appearing on the surface of the urine. A small amount of albumen and a few hyaline casts were present. The patient had gallstones, and was operated for the same. The chylous condition of the urine disappeared before the operation was attempted. This condition (chyle in the urine) is considered a rarity, and evidently in this case was due to a blockage of the thoracic duct, as no fat globules were found in the blood.

The following new members have been elected: Drs. E. H. Higbee, M. J. Lippe, J. F. Shoemaker, Edwin H. Eyerman, C. H. Zoller, Maurice E. Breed, Robt. F. Lischer, L. H. Brandenburger, A. P. Henke and H. E. Miller.

C. H. SHUTT, Reporter.

SOUTHEAST MISSOURI MEDICAL ASSOCIATION.

The twenty-ninth annual meeting of the Southeast Missouri Medical Association convened at Charleston, Missouri, May 2–4, 1905. The attendance was the largest in the history of the association, forty members being present. The following officers were elected for the ensuing year: President. T. W. Cotton; vice-president, J. D. Porterfield; corresponding secretary, T. C. Allen; recording secretary, C. R. Fleming; treasurer, W. E. Goodykoontz. The next semi-annual meeting will be held in October at Farmington. Dr. J. L. Eaton, of Bismarck, was endorsed by the association for appointment on the commission to locate the new tuberculosis sanitarium. Dr. Cotton, the newly elected president, is in Europe, but sent an excellent paper to be read before the association. The scientific program was an exceptionally good one. The association was royally entertained by the citizens and physicians of Charleston and the Mississippi County Medical Society.

T. C. ALLEN,
Corresponding Secretary.

THE McDOWELL DISTRICT MEDICAL SOCIETY.

(GASCONADE-MARIES-OSAGE COUNTY MEDICAL SOCIETY).

The McDowell District Medical Society was called to order by the chairman, Dr. J. D. Seba. Reading of the minutes of the previous meeting was dispensed with. Dr. J. D. Seba then delivered the annual address. Dr. J. J. Ferrell presented a tubercular clinic, which was discussed by all present. The society then adjourned for supper. Immediately upon reconvening Dr. J. J. Ferrell reported a case of "Dyspepsia," which was discussed by Drs. W. R. Ferrell, J. D. Seba, M. E. Spurgeon, W. S. Allee and J. W. Nieweg. The secretary-treasurer made report, which was accepted. It was then moved and carried to discontinue the McDowell District Medical Society. Immediately after discontinuing the McDowell District Medical Society it was moved and carried to organize a Gasconade-Maries-Osage County Medical Society. Dr. J. D. Seba was made temporary chairman, and Dr. J. W. Nieweg temporary secretary. Moved and carried to hold semi-annual meetings, the fourth Thursdays in April and October. Moved and carried that the annual dues be $3.00, payable at the October meeting. It was then

moved and carried that the constitution of the Missouri State Medical Association be adopted as amended. The election of officers for the ensuing year resulted as follows: President, J. J. Ferrell; vice-president, W. S. Ferrell; secretary-treasurer, J. W. Nieweg; delegate, J. D. Seba; censors, J. D. Seba, M. E. Spurgeon. By unanimous vote, Dr. W. S. Allee was made an honorary member.

J. W. Nieweg, Reporter.

BUTLER COUNTY MEDICAL SOCIETY.

Dr. W. A. Kendall, President.
Dr. J. J. Norwine, Secretary.

The Butler County Medical Society held its regular meeting in its room in the City Hall building, Dr. Kendall presiding. Those present were Drs. Kendall, Eskew, Wright, Taylor, Seybold and Norwine. The subject of discussion, "Illegal Practice," was taken up, and the following ruling adopted: That any member of this society knowing of any illegal practice being done in this county must make affidavit in writing, giving the names of the parties and their residence. This report shall be made at the meeting of this society, and without discussion. It will be referred to the committee on public health and legislation.

J. J. Norwine, Reporter.

BARTON COUNTY MEDICAL SOCIETY.

Dr. G. D. Allee, President.
Dr. J. L. McComb, Secretary.

The Barton County Medical Society held its regular meeting May 4th, Dr. G. D. Allee presiding. After the reading and approval of the minutes of the preceding meeting, Drs. Gise and McKelvey were elected to membership. Dr. T. H. Duckett was elected delegate, and Dr. M. G. Roberts alternate to the State Medical Association. There being no prepared program the society then discussed the best methods of securing the membership and attendance of the physicians of the county. It was finally decided to have a banquet on the evening of our next regular meeting. Drs. Griffin, Roberts, and Van Meter were appointed a committee to make arrangements for the occasion. Dr. T. A. Duckett was appointed reporter. The society adjourned to meet in Lamar, August 3, 1905. T. H. Duckett, Reporter.

BENTON COUNTY MEDICAL SOCIETY.

At a meeting of the medical profession of Benton county at Warsaw, Missouri, the following officers and members were elected: President, G. A. Greeson; secretary, S. O. Davis, treasurer, J. R. Smith. Delegate to attend the State Medical Association at Excelsior Springs, S. O. Davis.

The following members were elected: Drs. G. A. Greeson, R. F. D. No. 1, Lincoln; G. W. Woods, Fairfield; E. L. Rhodes, Lincoln; M. Dick, Cole Camp; J. W. Clark, Fristoe; W. G. Jones, Lincoln; N. A. Schwald, Cole Camp; E. E. Holtzen, Cole Camp; J. R. Smith, Warsaw; E. F. Haynes, Warsaw; S. O. Davis, Warsaw. Time and place of meeting have not yet been decided upon.

The members who have joined the organization will make it their special effort to get the remainder of the

members of the profession to join the society and make it a profitable organization both to the profession and the community.

LACLEDE COUNTY MEDICAL SOCIETY.

Dr. J. M. Billings, President.
Dr. J. A. McComb, Secretary.

The Laclede County Medical Society met at the Laclede Hotel, Lebanon, Missouri, on Monday, May 1st, with Dr. J. M. Billings, president, in the chair. There were present twelve physicians. This society was organized April, 1903, and has met semi-annually. At this meeting it felt strong enough to order meetings quarterly and elect two vice-presidents. A committee of three was appointed to investigate, secure evidence and report any illegal practice of medicine in Laclede county.

The following officers were elected for the ensuing year: President, Dr. J. M. Billings; vice-presidents, Dr. C. E. Carlton and Dr. Robt. Richey; secretary and treasurer, Dr. J. A. McComb.

Dr. J. A. McComb read a short paper on "Early Diagnosis of Chronic Phthisis Pulmonalis."

Dr. J. M. Smith, of Orla, presented a case of tuberculosis of the lung.

The paper and patient were the beginning of a very interesting discussion on this extremely important subject. It brought out the fact that we have much to learn of the early symptoms and pathology of consumption. Also that gross carelessness on the part of many physicians, woeful ignorance of some and unwarranted optimism of others, prevent getting the best results obtainable.

We were so well pleased with the subject and so little satisfied with the short time given it, that it was decided to continue the discussion at the meeting in July and further to consider the early treatment.

Dr. Jno. Jacobs, of Conway, was appointed to read the paper and all who could do so were requested to present patients.

By common consent we have adopted the plan of selecting at one meeting the subject to be studied at the next so we may be prepared to consider it more intelligently.

J. A. McComb, Reporter.

JACKSON COUNTY MEDICAL SOCIETY.

Dr. Robert T. Sloan, President.
Dr. Max C. Goldman, Secretary.

The following is the corrected paragraph referred to in my criticism of the published report of the meeting of March 9th:

"Two interesting cases of 'hydronephrosis' were reported by Dr. Howard Hill; in one, nephrectomy was performed, the renal substance having degenerated almost entirely and being enclosed, together with a large amount of fluid, in a dense fibrous capsule; in the other case the operation consisted of incision and drainage; it was found that some of the renal substance remained, and since the ureter was not obstructed by either a twist or stone, as Dr. Hill demonstrated by irrigation with methylene blue solution, the procedure indicated was elevation of the kidney structure and careful drainage. At the time this case was reported, there were encouraging prospects of restoration of some

of the renal function and closure of the fistulous tract."

The discussion was opened by Dr. A. E. Hertzler; Drs. C. M. Fulton and O. H. Dove also taking part.

MEETING OF APRIL 27, 1905.

The president, Dr. Robert T. Sloan, in the chair.

The cases of Pott's disease which Dr. M. M. Edmonson had consented to again present before the society were inspected by the members present, after which Dr. Katherine B. Richardson commented upon the remarkable improvement in the case of spondylitis involving the cervical region, stating that whereas before the child entered the hospital it was compelled to support the head with the hands, standing or walking being extremely painful, at present with the jury-mast and plaster-jacket applied, she plays with the other children and is improving wonderfully in every way. The doctor called attention to the well pronounced retraction of the chin in the case referred to, an unfortunate effect of the jury-mast.

A symposium on "Acute Articular Rheumatism," followed the presentation of the above cases. Dr. L. G. Taylor read the paper on "Etiology and Pathology;" Dr. Abram Miller considered the "Diagnosis and Prognosis;" Dr. Franklin E. Murphy presented some interesting statistics on the "Complications," especially the valvular heart lesions, and Dr. B. H. Zwart reviewed the "Treatment."

Many questions of importance were suggested in the consideration of this subject; those of greatest interest were: (1) the infectious character of the disease; (2) the pathology of the particular lesion, rare opportunity being afforded for pathologic study in the acute stages; (3) the role of the tonsils as avenues for the entrance of the infectious agent; (4) the relation of various conditions such as age, sex, seasons of the year and occupation to the occurrence of the disease and to the appearance of complications; (5) the relation of this disease to chorea, and (6) the liability to complications affecting the serous membranes.

The dissussion was opened by Dr. E. W. Schauffler; he laid stress upon the differential diagnosis between murmurs of heart lesions and of anemia, and stated that as a rule there should be no great difficulty in this. As to treatment, he recommended the use of salicylic acid derived from the oil of wintergreen, in as large doses as can be tolerated by the stomach.

The following also took part in the discussion: Drs. E. von Quast, Chas. H. Lester, N. P. Wood, C. B. Hardin, S. G. Burnett, F. L. Cook, J. W. Kyger and W. E. Montgomery.

MEETING OF MAY 11, 1905.

The President, Dr. R. T. Sloan, in the chair.

The professional program consisted of two very interesting papers: One by Dr. J. W. Kyger on the subject, "Septic Infection in the Newly Born," the other by Dr. William J. Frick on "The Treatment of Neglected Clubfoot."

Dr. Kyger considered only a few of the infections of early infancy, such as those arising from the invasion of the umbilical wound by the staphylococcus pyogenes, the streptococcus of erysipelas, and the bacillus of tetanus, vulvo-vaginitis, and other go-

nococcus infections, particularly ophthalmia. The treatment of most of the infections is chiefly prophylactic, and in all forms of gonococcus infections, isolation was recommended.

Dr. A. E. Hertzler opened the discussion. He referred to the frequent association of icterus with the infections occurring in early infancy, and stated that one must be careful in differentiating between the so-called idiopathic icterus and that due to general septic conditions.

Dr. Jos. Lichtenberg spoke of ophthalmia neonatorum, and laid stress upon the statement that all ophthalmias of the newly born are of gonorrheal origin. He outlined a simple but very efficacious treatment for this affection.

Dr. J. W. Kyger closed the discussion.

The paper read by Dr. William J. Frick on "The Treatment of Neglected Clubfoot," was one of unusual value; a feature of great interest was the success which the essayist has had with the manipulative method of treatment in cases of extreme deformity. He said the proper time to operate is when the child has learned to walk, so that after correction of the deformity the child helps by walking upon the corrected foot. The method recommended very highly is that of manipulation; each deformity should be worked out separately, using gentle force in the beginning, but gradually increasing it. He stated further, that while it becomes necessary in some cases of deformities to operate upon the bones or soft parts, yet he would always choose the least mutilating procedure. The best results however, he obtains from the manipulative method.

Braces are necessary to maintain the original correction and thus prevent return, and the best fixation apparatus is the starch bandage, reinforced by strips of zinc. But, used alone, mechanical appliances are never effectual. In using a brace, one should never immobilize too much. The essayist concluded with the remark, "The treatment of clubfoot by the brace is a mistreatment by the brace."

The paper elicited considerable discussion. Dr. J. D. Griffith referred briefly to the pathology of the clubfoot deformities, describing the changes in the various structures, such as bones, muscles, tendons, and ligaments occurring in the more common varieties. He indorsed the manipulative treatment, but emphasized the importance of the retention of the correction, and the observation of the cases for several years before dismissing the patients as cured. He spoke also of the frequent necessity of lengthening the fasciæ and tendons in cases of long standing deformity before correction can be effected. He recommended the starch bandage dressing over zinc strips, as described by Dr. Frick in his paper.

The following also took part in the discussion: Drs. J. F. Binnie, A. L. Fulton, E. F. Robinson, M. M. Edmonson, H. E. Pearse and A. E. Hertzler.

Dr. Frick closed the discussion.

Additional members: Michael J. Owens, Kansas City and Richard H. Lee, Kansas City.

MAX GOLDMAN, Secretary.

RALLS COUNTY MEDICAL SOCIETY.

Dr. O. B. Hicklin, President.
Dr. T. J. Downing, Secretary.

The Ralls County Medical Society held its regular meeting in New London, April 13, 1905, Dr. W. S. Harwood in the chair. The minutes of the previous meeting were read and approved, after which Dr. Thos. Monroe, of Center, was elected a member of the society. The next meeting will be held on July 13th, at Spalding Springs, when every Ralls county doctor and his family will be present for a day's outing. Physicians of adjoining counties are invited. An interesting program is being prepared.

T. J. Downing, Reporter.

ABSTRACTS.

An Accidental Rephrectomy.—E.W. Hedgers of Plainfield, N. J., reports an interesting case illustrating the difficulties often met with in attempted diagnosis of abdominal surgical cases. The patient, a woman of thirty-nine years, had had excellent health up to eight years previous to her coming under the observation of Dr. Hedges. At that time she was taken with sudden pain in the right iliac fossa, with vomiting, tenderness on pressure, intense pain on every movement of the body, followed by chills, fever and a period of illness which confined her to bed for eight weeks, during nearly the entire period there being tenderness on pressure over McBurney's point. Ever since that original attack she has been tender in that region, has been unable to do hard work, often being obliged to lie down for hours after unusual exertion. Otherwise her general health has been good.

Four days before Dr. Hedges saw her she was taken with sharp pains in the right inguinal region, forcing her to lie down for half a day. Next day the pains returned with increasing severity, accompanied with vomiting. The tenderness increased and on the the third day she had a chill, followed by fever; temperature 101, pulse 110, small and thready; expression drawn and anxious. The right rectus was rigid, the slightest movement gave pain, and the region of McBurney's point was exceedingly tender. While preparing for operation the pulse went to 124 and the temperature to 102.

Upon opening the abdomen through the right rectus a hard mass was felt at the bottom of the incision. The incision was enlarged downward and the mass was found adherent to the parietal peritoneum and the omentum, receiving the bulk of its blood supply from the latter structure. This strip of omentum was ligated and removed, the abdominal cavity walled off and the mass, which was hard and globular, about three times the size of a golf ball, was enucleated. It was found to be a much atrophied kidney about two and a half inches long, two and a quarter inches wide and two inches thick. There was no bleeding from the place where the kidney had

been—the mass having received its entire blood supply from the omentum. An examination revealed the left kidney in place, but no right kidney. The patient left the hospital on the thirty-third day following the operation feeling perfectly well, with no pains and able to walk about freely.

The kidney was found to be hard on section; an ivory-like white stone, cylindrical shaped, an inch and a half long by about an inch in diameter, completely filled the kidney pelvis and forced its way into the kidney substance. Mere traces of the renal artery, vein, and ureter were found. They were atrophied almost beyond recognition and evidently had not functioned for years. The capsule was studded with large veins, evidently anastomosing with the larger veins of the omentum. Doubtless the kidney had been nourished vicariously through the omentum circulation.

"The moral of this tale," says Dr. Hedges, "is that an operator is likely to stumble on the unexpected in doing abnormal work, and that an appendical attack is simulated by many other conditions, even by an inflammation around a prolapsed and atrophied kidney."

Physical Means as Aid to Practice.—The idea that adjuncts to the aid of the physician, such as electricity, massage, hydrotherapy, etc., are specialties, and should be confined to those who limit their time exclusively to this class of work, is an erroneous one.

No great amount of technical knowledge is required, and a little attention and study of these subjects will soon qualify one to treat patients intelligently.

We are prone to rely too much on medicine alone, forgetting these aids that we should call to our assistance, and leave to irregular practitioners and quacks the use of these methods. It is, perhaps, because it is the method of the quack and irregular, that so many look askance at anything except old established lines of treatment with drugs.

It is unquestioned that osteopaths, for instance, relieve and cure a great many ailments. And why? Because their method is chiefly an elaborated system of massage.

Now, whatever is good in it is taken from the idea of massage, which ought to be at the command of every physician. If this were done such fads would soon lose their distinctive names, and become part of the armamentarium of every well informed physician.

At Panama as well as in Cuba there are more than rumors of bad conditions on the Isthmus, and the reported presence of yellow fever in several localities, with the death of one naval surgeon, would seem to indicate the urgent need of some change in spite of what the commission may say in reply to Dr. Reed, particularly in view of what these same sanitarians were able to accomplish in Cuba. There is also no doubt that if they had been hampered in Havana as in Panama, the discovery of the method of the transmission of yellow fever would not have been made. This priceless advance in hygiene touches every American, and it is therefore of national and international importance

to call attention to what can be accomplished by unhampered sanitary work. It is certainly gratifying that in municipal hygiene there is a growing tendency of the people to insist that their sanitary experts shall be supported and not hampered by the administration. The gradual awakening of the people to these facts is naturally leading to the establishment of wealthy philanthropists of vast institutions for the study of improved methods of prevention. The restriction placed upon the sanitarians of the Isthmus is, therefore, the more remarkable. The people, particularly those who lost their sons, are still thinking of the preventable camp diseases of a few years back, and want to know why the experts did not prevent them; and they will soon want to know why prevention cannot be carried out in Panama as was done in Cuba. There is, therefore, the more reason for astonishment at Dr. Reed's revelations. We must send there our most intelligent engineers, and the nation's welfare demands that they receive every protection the most advanced sanitation can give them.

A Floating Sanitarium.—The steamship Fuerst Bismarck, launched on March 22d, at Glasgow, has the distinction of being the first ocean liner designed especially as a floating sanitarium. She is a twin screw of 8,600, tons, and is built for the Hamburg-American line. She will start on her first cruise on July 6th, covering 3,773 miles, stopping for a time at Guernsey, Bantry Bay, Stornoway, Leith, the Shetlands, Trondhjem and Bergen. Dr. Schweninger, who was physician to Prince Bismarck, will personally supervise the cruises. He will be assisted by a corps of physicians who will care for the health seekers free of charge. The cruises will be chiefly for convalescents and those in need of rest and recreation. The ship will have a gymnasium, electric baths, massage rooms, and all other equipments of a stationary sanitarium.—*New York Medical Journal.*

The commission appointed in New York to study cerebrospinal meningitis has held a consultation, and an appropriation of $5,000 has been made for the use of the commission, to be increased if necessary. There is much concern over the epidemic. During the month there has been an average of five deaths a day from the disease. The average for the past few years has not been more than two a week. No less than 386 deaths have occurred, mostly on the East Side, from the disease since January 1st. The personnel of the commission is as follows: William M. Polk, chairman, dean of Cornell Medical College; Walter B. James, professor in the College of Physicians and Surgeons; William P. Northrup, professor in Children's Diseases in Bellevue Hospital and at New York University; Simon Flexner, head of the Rockefeller Institute; Joshua M. Van Cott, Pathologist at the Long Island College; E. K. Dunham, Pathologist of Carnegie Laboratory, and William K. Draper, visiting physician at Bellevue and Minturn Hospitals, and a specialist in cerebrospinal meningitis. The commission will not do the active work. Other physicians who have cases of spinal meningitis will be asked to make experiments and tests, and to send them

to the commission. The commission will pass on them and devise means, if possible, to alleviate the alarming spread of the disease.—*American Medicine.*

Cerebro - Spinal Meningitis. — On several occasions recently we have referred to the ravages produced in New York City by the present epidemic of cerebro-spinal meningitis. The efforts of the department of health to secure a municipal investigation have at last been crowned with success, and the city fathers have appointed a commission representing all the medical schools in the city, and have provided the commission with an initial appropriation of $5,000, with the promise of more if necessary. The department may well be alarmed, as each week shows a steady increase in the number of deaths over the week preceding. For the week ending March 11th the total mortality from this one disease was 76, as against 58 for the week preceding. The disease, which was at first confined to the East Side, has now spread to other parts of the city, and has broken out in other cities, notably Philadelphia and New Haven. The commission consists of the following well-known physicians: William M. Polk, chairman, dean of Cornell Medical College; Walter B. James, William P. Northup, Simon Flexner, head of the Rockefeller Institute; J. M. VanCott, E. K. Dunham, pathologist of Carnegie Laboratory, and W. K. Draper. If anything worth while can be accomplished in lessening the spread or the mortality of this infection, it surely ought to be done by this eminent body of scientists.

Attention was called last week to the work that is being done in the treatment of cerebro-spinal meningitis by injections (large injections) of the diphtheria antitoxin. The first efforts of the commission will probably be to investigate this method thoroughly in a large number of cases in different hospitals, and thus satisfy themselves of the truth of the claims set forth by the discoverers. We are beginning to believe that the disease is to a certain degree contagious, in that Drs. A. R. Craig, of Philadelphia, and J. A. Moore, of New Haven, have recently succumbed to it in the line of duty. This is directly contrary to the teaching of Osler, who, in his Cavendish lecture of 1899, stated that he knew of no case in which a physician or nurse in attendance had been attacked or had been infected. It would seem from this recent experience that, while "waiting for something to turn up," it would be well to apply vigorously those principles of hygiene of which we are aware, namely, thorough disinfection of all discharges from the throat, nose and lung, and prompt separation of the sick from the well.—*Lancet Clinic.*

A Test of Christian Science.—A bill has been introduced in the Iowa Legislature forbidding Christian Science "healers" to practice their art in the state under penalty of imprisonment in the penitentiary. The introducer of the bill has promised to withdraw it if the Christian Scientists will cure the doorkeeper of the house of deafness. Some of the "healers" are not willing to accept the challenge, but others believe that

this is the appointed time to make a great demonstration of their powers in the most public way, and propose to organize a concert of prayer and hard thinking for removal of the doorkeeper's belief that he cannot hear.

Cerebro-spinal Meningitis in Cattle.—Paul Shekwana, Bacteriologist of the Iowa State Board of Health, Iowa City, Iowa.—The object of this article is to draw the attention of the medical profession as to the possible sources from which cerebrospinal meningitis may spread. Until very recently it was believed by all that this disease occurred only in man. Lately, however, a few cases have been recorded by the Minnesota State Board of Health, which show that it occurs in cattle also.

On February 20, 1905, Dr. H. E. Talbot of Des Moines, submitted the brains of two cattle to be examined at the laboratory of the Iowa State Board of Health in Iowa City. This gentleman stated that a number of cattle had been dying in the neighborhood of Colfax of an epidemic of a perplexing disease, which he thought to be some form of meningitis. He wanted to know if it was infectious or contagious. Professor H. Albert, the director of the laboratory, and the writer inoculated a rabbit under the dura mater with i. c. c. of an emulsion made from the two brains. The animal died after thirty-six hours, showing before death and at the postmortem examination, all the signs and symptoms of cerebrospinal meningitis, retraction of the head, thrombosis of the blood vessels, softening of the brain, and exudate about the meninges, etc. The microscopical and cultural examinations also proved it to be the disease in question. The slide preparations from both the original brains and from the brain of the rabbit inoculated by us, showed a great number of diplococcus intracellularis meningitidis, some within and some outside the cells.

From this case and those examined by the Minnesota Board of Health, it is evident that the disease is much more widely distributed than it was at first supposed to be. Therefore, it becomes a subject of the greatest importance and interest to all medical men, as well as to the public in general, to know the sources from which the disease may spread and thus to guard against infection from it.

We know for certain that cerebrospinal meningitis is an infectious disease, occurring generally in epidemics in man; but now we have reasons to believe that it occurs in cattle as well. Whether man infects cattle or cattle infects man, it cannot be definitely said, but certain it is that the disease attacks both animals. From this fact it can be reasonably inferred that one mammal infects the other and vice versa.

The question then arises: Is it not quite possible that cattle have been the source of infection in some of the epidemics occurring in man? In cerebrospinal meningitis there is usually a discharge from the nose, and this discharge contains diplococcus intracellularis meningitidis, and thus becomes the principal source of infection. On account of this great danger, care should, therefore, be taken by all those who come in contact with cattle suffering from the disease.

Cerebrospinal meningitis, then, must be considered to be a malady which not only affects man but cattle as well. The disease probably affects other lower animals, too, though in regard to this point we have at present no definite knowledge.—*New York Medical Journal.*

Cheering Words for Home-Bound Consumptives.—For nearly four years now a most interesting experiment has been in progress on Ward's Island, in the city of New York, and may fairly be said to have passed the stage of experiment and become an established feature of practice in the Manhattan State hospital, East, under the enlightened and progressive management of Dr. A. E. Macdonald. It is that of treating the consumptive insane in tents. Dr. Macdonald's account of the experience has been published by the Charity Organization Society, in its Directory of Institutions and Societies dealing with tuberculosis in the United States and Canada, and by the National Association for the Study and Prevention of Tuberculosis. It has now been issued in pamphlet form.

It was at first supposed that the camp treatment would be practicable in the mild season only, but it has been found exceedingly satisfactory to continue it through the entire year. "The Ward's Island Camp," says Dr. Macdonald, "is but a few feet above the tide-water level, its site is swept in winter by winds of high velocity, coming over the ice-bound waters of the rivers and the sound which surround it and it suffers as much as, or more than, any other part of the city of New York from the trying changes of temperature and humidity which are so characteristic of its climate." And he asks: "If, in spite of all these drawbacks, what has been done can be done, and that for insane patients, what may not be hoped from the extension of the same methods to the ordinary consumptive of sound mind, anxious for recovery and capable of giving intelligent assistance in the struggle?"

It was feared at the outset that both the patients and their friends would protest against the open-air treatment, but such protests have been very few, and, indeed, the cry now is for the early vernal restoration to it of the few who were returned to the buildings for the winter. The effect on the tuberculous trouble has been most gratifying—indeed, in one instance a man's weight was doubled—and both the patients and the nurses in the camps have enjoyed almost complete immunity from other pulmonary diseases; not a single case of pneumonia has occurred among them during the period, and colds have been unknown. In several instances the patients' mental condition has been much ameliorated and in a few wholly restored to the normal.—*New York Medical Journal.*

Cancer.—In spite of much time, thought and profound investigation, cancer remains an unsolved enigma. It is, indeed, the defiant sphinx of histological and pathological science, as well as the healing art. The careful study that has been bestowed upon the subject has, however, revealed many important features of cancer, in spite of the fact that one vital point—the cause—still escapes

our grasp. The ultimate causative factor in the life-history of a cancer cell is as great a mystery as the great primal cause of the universe. When the cause of a cancer shall have been discovered and demonstrated beyond peradventure, we may feel that we have secured a dominant position that commands the situation. Until then, the treatment must continue empirical.

What do we know? First—We know that cancer is a progressively fatal disease; unless arrested by some artificial intervention it will surely cause death.

Second—We know that cancer is primarily a local disease, and, if completely removed before constitutional infection has occurred, is within the possibility of cure.

Third—We know that early operation depends upon early recognition, and that the responsibility, therefore, rests primarily with the family physician. He can discharge this responsibility by keeping himself ever mindful of the possibility of the development of cancer and promptly submitting all doubtful or suspicious cases to a microscopic test, and, when once the diagnosis has been made, with the same promptness subjecting the patient to the most radical operation the condition demands or justifies. The family physician need not fear being denounced as an alarmist, as Mayo Robson in his Bradshaw lecture before the Royal College of Surgeons recently said: "It is better to alarm and cure than to lull into false security and have to operate later under less favorable conditions. It is certainly wrong to wait for a doubtful growth to become unquestionably malignant."

Fourth—We know that clinical observation has established the fact that chronic irritation is the conditional, the exciting or predisposing cause of cancer. It, therefore, becomes possible to recognize a pre-cancerous condition, and by prompt intervention avail ourselves of prophylactic measures. Here the educational function of the physician has its highest expression. People should be taught that the pipe, cigarette inhalations and excessive smoking are productive of cancer of the lip, mouth and throat; that apparently simple spots and growths in or under the skin may be a source of danger to be promptly removed, or, at least, carefully watched. Injuries to the breast, or tumors therein, especially demand scientific professional attention. When we come to the uterus, where more or less serious injuries are so general and cancer so frequent, especial vigilance is imperative. Lacerations of the cervix, especially if extensive, should be repaired before the woman approaches the menopause. Another source of chronic irritation in the uterus which has been attracting attention of the best observers as a probable cause of cancer, is fibroid tumor. A number of cases of cancer of the fundus have been observed in maiden ladies (virgins), associated with fibroid tumor, in which the tumor was apparently the only source of irritation. Since attention has been attracted to this association of fibroid and cancer, many cases have been observed, and evidence in favor of a casual relation is steadily growing. If further ob-

servation confirms this hypothesis the dictum that all fibroid tumors of the uterus, large or small, and wherever situated, should be removed on discovery, will rest upon a still more secure foundation. Prompt operation in cases of fibroid tumor of the uterus will take its place as a prophylactic, not only against well-known degenerations and complications, but also against cancer.—*New York State Journal of Medicine.*

Syphilis in the Sudan.—A. Balfour says that this disease is exceedingly prevalent in the Sudan. In the time of the Dervishes it was considered rather an honor to have acquired infection. A lad was not a man till he had developed a chancre. The results of this ignorant and pernicious regime are deplorable. Patients do not visit the hospitals till they are masses of ulceration and necrosis. True, they make use of tureba, a native preparation of mercury found locally, and they even fashion cones for fumigation with it, but their treatment is not conducted on sound principles, and is probably more harmful than beneficial. Education, combined with proper sanitary measures, is the only remedy. The Sudanese are fond of their children, and if they could be made to understand how frequently they are themselves to blame for the pitiable condition of their offspring, be taught the dangers and crippling effects of the unchecked disease, and be instructed how to avoid acquiring it, and how much can be done by proper treatment when it is acquired, a great step would have been taken to ameliorate their sad condition.—*Report of the Welcome Research Laboratories at Khartoum.*

President Harper Operated On.—February 22, Dr. Wm. R. Harper, President of the University of Chicago, was operated upon by Dr. Charles McBurney of New York, and, according to a bulletin issued shortly after the operation and signed by Dr. Frank Billings, a condition of thickening of the posterior wall of the head of the colon and enlargement of the glands of the mesentery was found. The entire removal of the diseased tissue was deemed impossible by the surgeons, and the wound was closed. The bulletin states that "it was the opinion of Dr. McBurney and Dr. Bevan that the disease was carcinoma. It has been decided that President Harper shall be placed upon medical and x-ray treatment, with the reasonable hope that the disease may be checked. It is anticipated that President Harper will make a speedy convalescence."—*Medical Record.*

Intussusception of the Appendix Vermiformis.—George Emerson Brewer, M. D. (New Yor), reports the case of a female, aged twenty-two, who was admitted to the Roosevelt Hospital in the spring of 1904, suffering from symptoms of acute appendicitis. The abdomen was opened, and a prolonged search for the appendix was made without finding any trace of the organ. Five months later the patient again presented herself, complaining of constant pain and tenderness in the right iliac fossa. The abdomen was again opened, the ileocæcal region dissected free from the

mass of adhesions and thoroughly inspected. No trace of an appendix could be found, but on palpating the cæcum an elongated oval body could be felt within its lumen. The intestine was opened by longitudinal incision, and the inverted appendix was found projecting from its attachment to the interior extremity of the cæcum. The mass was removed and the wound in the cæcum and colon sutured. The patient made a satisfactory recovery, and was entirely relieved of her symptoms. The pathological report showed the specimen to be an inverted appendix.—*American Medicine.*

Compulsory Vaccination is Not Unconstitutional.—The United States Supreme Court has recently decided that compulsory vaccination ordered by local boards of health on authority of state legislatures is valid, because it is for the public good. The constitutional guarantee of personal liberty, the court holds, is not infringed. The case was brought by a man of Cambridge, Massachusetts, who declined to submit to vaccination in an outbreak of smallpox, and was fined. He contended that the law was contrary to the preamble to the Constitution, its spirit, and to the fourteenth amendment; that vaccination did not protect, and that it was dangerous, sometimes causing permanent injury to health and occasionally death. In delivering the opinion of the court Justice Harlan said the Constitution did not grant to one person or a minority residing in any county, and enjoying the benefits of its local government, the liberty thus to dominate the majority in such cases. The matter was primarily one of the state regulation, and did not ordinarily concern the national government. The liberty secured by the Constitution to every person within its jurisdiction did not mean that each person should be at all times and in all circumstances wholly freed from restraint.—*Medical Record.*

Adulteration of Candy.—A report to State Commissioner of Agriculture Charles A. Wieting by Dr. Joseph F. Geisler and Professor E. G. Love shows that the cheaper candy sold in the city is adulterated to a surprising degree. In more than two hundred samples taken from New York stores and submitted for analysis paraffin was found in caramels, chocolates and molasses candy; ordinary varnish was discovered as a coating for chocolates; aniline red and blue were detected as a coloring in gum drops and sticks of candy, while glucose was found in nearly all the cheap confections. The report included analysis of maple sugar, jellies, catsup and honey. Of sixty-nine catsups all but one showed added color; a sample of maple sugar contained at least 90 per cent. of cane sugar, and the honey examined was largely adulterated with cane sugar or glucose.—*Medical Record.*

A Source of Dissecting-Room Material.—According to an Indiana newspaper, the removal of an axe factory has cut down very largely the supply of anatomical material of Indianapolis medical colleges. The workers in the factory were largely negroes, among whom pulmonary diseases, due to work at the grinding machines,

were very common. Nearly all had insurance policies, which, before death, were usually assigned to some friend for the purpose of paying the funeral expenses. The money was usually converted to other uses, however, and the body allowed to go to the destination the law prescribes for paupers. The removal of the factory resulted in a prompt decrease of available cadavers.—*Medical Record.*

Disease Invades the City of Healers.—Several of the prominent officers of Zion City have recently suffered severe illness, and some have died, and now it is said that Dowie himself has cancer, which he cannot cure or get cured by the extra-surgical methods of his list.

On February 21st the new tuberculosis dispensary at Johns Hopkins Hospital was opened with appropriate exercises. Dr. Henry Barton Jacobs, president of the Lænnec Society, made an address on the "Origin and Rise of Tuberculosis Dispensaries." Dr. Herman M. Riggs, medical director of the New York City Health Department, made an address on ' The Advantages of a Tuberculosis Dispenpensary." Dr. Wm. Osler spoke on "Tuberculosis in the General Hospitals," offering the restriction which excludes consumptives from general hospitals. Dr. Wm. H. Welsh also spoke. Mr. Henry Phipps, of Pittsburg, through whose generosity the dispensary was built, was present and responded happily to the demand upon him for a speech. He deprecated the use of his name as a designation for the dispensary. After March 1st the regular clinical work of the dispensary will begin, Dr. Louis V. Hamman being in charge.—*Maryland Med. Journal.*

The hypodermic injection of brandy, whiskey or sulphuric ether is one of the best methods of combating intense shock and collapse, but the surgeon should always remember to inject them deep into the muscles, as they may cause sloughing of the skin if injected beneath it, and they should not be introduced in the neighborhood of any important nerve, as they have been known to cause paralysis or neuritis.—*Journal Medicine and Science.*

Gauze Drains.—Gauze drains left in wounds should not, as a rule, be removed until the fourth day, when the adhesions have liquified and the gauze is easily removed. In the uterus gauze should never be left in more than twenty-four hours, owing to danger of sepsis.—*International Journal of Surgery.*

BOOK REVIEWS.

Transactions of the Minnesota State Medical Association: Thirty-sixth Annual Meeting, 1904. This volume is very neatly printed, 416 pages, with 8 illustrations, and 40 original articles.

American Alkalometry. Volume IV. A Digest of Clinic Teachings. 1902 and 1903. Edited by W. C. Abbott and W. F. Waugh.

Gynecology, Medical and Surgical. By Henry J. Garrigues, A. M., M. D., Gynecologist to St. Mark's Hospital in New York City; Consulting Obstetric Surgeon to the New York Maternity Hospital; Consulting Physician to the New York Mothers' Home and Maternity; Honorary Fellow of the American Gynecological Society; Honorary Fellow of the Obstetric Society of Edinburgh; Honorary Member of the College of Physicians of the German Dispensary; ex-President of the German Medical Society; formerly Professor of Gynecology and Obstetrics in the School for Clinical Medicine, and Professor of Obstetrics in the Post-Graduate School and Hospital. With 343 illustrations.

This work is carefully rewritten and revised, and much new matter has been added. It is a work that will meet the necessities of the specialist and the general practitioner of medicine in equal degree. J. B. Lippincott Company, Philadelphia. 1905. $3.00 net.

The Medical Examination for Life Insurance and Its Associated Clinical Methods, with Chapters on the Insurance of Substandard Lives and Accident Insurance. By Charles Lyman Greene, M. D., St. Paul. Second edition, revised and enlarged, with 99 illustrations. Philadelphia: P. Blakiston's Son & Co. 1905. $4.00 net.

Life insurance examination has become a quite important means of revenue to the practicing physician, and yet very little adequate instruction in this branch is given in our medical schools. This book covers this particular field of medicine and covers it well, thus filling a real need. Students and practitioners alike will find the work just what they need in qualifying themselves to become medical examiners for life insurance companies.

International Clinics. A quarterly of illustrated clinical lectures and especially prepared original articles on treatment, medicine, surgery, neurology, pediatrics, obstetrics, gynecology, orthopedics, pathology, dermatology, ophthalmology, otology, rhinology, laryngology, hygiene, and other topics of interest to students and practitioners; by leading members of the medical profession throughout the world. Edited by A. O. J. Kelly, A. M., M. D., Philadelphia, U. S. A. Volume I. Fifteenth series. 1905. J. B. Lippincott Company. $2.00 net.

BIOGRAPHICAL SKETCH.

Robley Dunglison, the well-known American physician, was born in Keswick, England, January 4, 1798. He was educated in England, studying medicine at London and Erlangen. In 1824 he came to America to accept the chair of medicine in the University of Virginia. After occupying this professorship for nine years he accepted the chair of therapeutics in the University of Maryland. Two years later he became professor of the institute of medicine in Jefferson Medical College in Philadelphia. Among his publications were twenty volumes treating of subjects connected with medical science. They were widely circulated and highly valued in their day, one of their number, the Dictionary of Medical Science and Literature, being republished as late as 1874. Dunglison died in Philadelphia, April 1, 1869.

ROBLEY DUNGLISON.

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Howard	A. W. Moore	Fayette	C. W. Watts	Fayette.
Howell	J. W. Bingham	Pottersville	H. C. Shuttee	West Plains.
Iron	R. W. Gay	Ironton	Ira A. Marshall	Ironton.
Jackson	Robt. T. Sloan	Kansas City	Max Goldman	Kansas City.
Jasper	A. B. Freeman	Joplin	J. T. Stamey	Joplin.
Jefferson	W. H. Farrer	DeSoto	H. Will Elder	DeSoto.
Johnson	M. P. Shy	Knobnoster	E. H. Gilbert	Warrensburg.
Knox	S. S. Brown	Edna	Henry J. Jurgen	Edna.
Laclede	J. M. Billings	Lebanon	J. A. McComb	Lebanon.
Lafayette	P. S. Fulkerson	Lexington	C. T. Ryland	Lexington.
Lincoln	S. R. McKay	Troy	Wm. P Smith	Troy.
Linn	K. V. Stanley	Brookfield	D. F. Howard	Brookfield.
Livingston	David Gordon	Chillicothe	J. F. Cherrington	Chillicothe.
McDonald,	E. F. Doty	Anderson	M. L. Sellers	Anderson.
Macon	E. S. Smith	Macon	G. B. Rush	Macon.
Madison	G. W. Greenwood	Fredericktown	C. U. Davis	Fredericktown
Marion	R. H. Goodier	Hannibal	F. Janet Reid	Hannibal.
Mercer	H. P. Chesmore	Princeton	C. R. Buren	Princeton.
Miller	S. P. Hickman	Ulman	G. D. Walker	Eldon.
Mississippi	A J. Martin	East Prairie	W. P. Howle	Charleston.
Moniteau	J. B. Stewart	Clarksburg	W. R. Patterson	Tipton.
Monroe	S. M. Brown	Monroe City	M. C. McMurry	Paris.
Montgomery	J. L. Jones	Jonesburg	W. M. Wheeler	High Hill.
Morgan	W. L. Hatler	Barnett	J. T. Beale	Versailles.
Nodaway	J. A. Larrabee	Barnard	F. R. Anthony	Maryville.
Newton	J. W. Lamson	Neosho	Horace Bowers	Neosho.
Pemiscot	D. B. Crowe	Caruthersville	J. G. Luten	Caruthersville.
Perry	T. M. Hudson	Perryville	F. M. Vellells	Perryville.
Pettis	W. C. Overstreet	Sedalia	W. J. Ferguson	Sedalia.
Phelps	W. H. Breuer	St. James	S. L. Baysinger	Rolla.
Pike	M. O. Biggs	Bowling Green	T. Guy Hetherlin	Louisiana.
Platte	R. P. Davis	Woodruff	G. C. Coffey	Platte City.
Pulaski	W. L. Ragan	Richland	G. W. Quick	Crocker.
Putnam	C. H. Carryer	Hartford, Mo	T. A. Townsend	Unionville.
Ralls	O. B. Hicklin	New London	T. J. Downing	New London.
Randolph	G. O. Cuppaidge	Moberly	W. M. Dickerson	Renick.
Ray	Chas. B. Shotwell	Richmond	L. D. Greene	Richmond.
Reynolds	J. M. Lowery	Centerville	T. W. Chilton	Corridon.
Saline	D. C. Gore	Marshall	D. F. Bell	Marshall.
St. Charles	J. R. Mudd	St. Charles	A. A. Gossow	St. Charles.

COUNTY.	PRESIDENT.	ADDRESS OF PRESIDENT	SECRETARY.	ADDRESS OF SECRETARY.
St. Clair	W. Cline	Appleton City	E. D. Miles	Osceola.
St. Genevieve	M. Andre	St. Genevieve	F. E. Hinch	St. Genevieve.
St. Louis	F. L. Henderson.	Century Bldg.	T. A. Hopkins	Century Bldg.
St. Louis Co.	H. G. Wyer	Kirkwood	H. T. Randle	Clayton.
Schuyler	J. T. Jones	Queen City	H. E. Gerwig	Downing.
Scotland	W. E. Alexander.	Memphis	O. F. Pile	Memphis.
Shelby	H. C. Vaughn	Shelbina	A. M. Wood	Lentner.
Stoddard	D. R. Corbin	Bloomfield	Jno. Ashley	Bloomfield.
Sullivan	J. C. Kessenger.	Milan	J.S. Montgomery.	Milan.
Vernon	H. C. Jarvis	Schell City	T. B. Todd	Richards.
Warren	W. J. Alexander.	Marthasville	E. A. Fluesmeier.	Wright City.
Washington	J. A. Eaton	Belgrade	W. S. Smith	Belgrade.
Wayne	L M. Pettit	Greenville	I. N. Barnett	Piedmont.

MEETINGS OF COUNTY MEDICAL SOCIETIES.

COUNTY.	DATE OF MEETING.
Adair	Quarterly. Last Tuesday, Jan., Apr., July, Oct.
Andrew	Monthly. First Wednesday.
Atchison	Quarterly. January, April, July, October.
Audrain	Monthly. First Monday.
Barton	Quarterly. First Thursday, May, Aug., Nov., Feb.
Bates	Quarterly. Last Thursday in Feb., May, Aug. and Nov.
Boone	Monthly. First Monday.
Buchanan	Semi-Monthly. First and Third Saturday.
Butler	Weekly. Fridays.
Caldwell	Quarterly. July, October, January, April.
Callaway	Monthly. Second Thursday.
Camden	Quarterly. Second Monday, April, July, Oct., Jan.
Cape Girardeau	Monthly. Second Wednesday.
Carroll	Monthly. Second Tuesday.
Carter-Shannon	Quarterly. February, May, August, November.
Cass	Quarterly. First Thursday of March, June, Sept., Dec.
Chariton	Monthly. Last Thursday.
Clark	1st Mondays Feb., Apr., June, Aug., Oct., Dec.
Clay	Monthly. Last Monday.
Clinton	Monthly.
Cole	Quarterly. Second Thursday of Jan., Apr., July, Oct.
Cooper	Monthly. First Tuesday.
Crawford	Quarterly. First Tuesday, Apr., July, Oct., Jan.
Daviess	Quarterly. January, April, July, October.
Dunklin	Monthly. First Tuesday.
Franklin	Monthly. First Tuesday.
Gasconade-Maries-Osage	Monthly.
Greene	Weekly. Saturday.
Grundy	Quarterly. July, October, January, April.
Henry	Monthly. Second Tuesday.
Holt	Quarterly. January, April, July, October.
Howard	Monthly. Third Tuesday.
Howell	First Thursday of Dec., Feb., Apr., June, Aug. Oct.
Iron	Monthly. First Saturday.
Jackson	Semi-Monthly. Second and Fourth Thursdays.
Jasper	Semi-Monthly. First and Third Mondays.
Jefferson	Monthly. Fourth Tuesday.
Johnson	Quarterly. June, September, December, March.
Knox	Monthly. First Monday.
Laclede	Semi-Annually. First Mondays May and November.
Lafayette	Monthly. 2d Tuesday, Jan., Mch., May, July, Sept. Nov.
Lincoln	Quarterly. May, August, November, February.
Linn	Quarterly. October, January, April, July.
Livingston	Monthly. Second Thursday.
McDonald	Monthly. First Wednesday.
Macon	Monthly. On or before full moon, Tuesday, 10 a. m.
Madison	Semi-Monthly. First and Third Monday.
Marion	Monthly. First Friday.
Mercer	Monthly. Second Thursday.
Miller	Quarterly. First Thursday, March, June, Sept., Dec.
Mississippi	Monthly. First Monday.
Moniteau	Quarterly. March, June, September, December.

County	Date of Meeting.
Montgomery	Monthly.
Monroe	Quarterly. First Tuesday of April, July, Oct., Jan.
Morgan	Quarterly. First Wed. of March, June, Sept., Dec.
Newton	Monthly. Second Tuesday.
Nodaway	Monthly. Second Tuesday.
Pemiscott	Quarterly. First Tuesday, Jan., April, July, Nov.
Perry	Monthly. First Wednesday.
Pettis	Semi-Monthly. First and Third Monday.
Phelps	Quarterly. March, June, September, December.
Pike	Monthly.
Platte	Monthly. First Wednesday.
Pulaski	Monthly.
Putnam	Monthly. First Wednesday.
Ralls	Quarterly. January, April, July and October.
Randolph	Monthly. Second Tuesday.
Ray	Monthly. Third Wednesday.
Reynolds	Quarterly. January, March, June, October.
Saline	Monthly. Second Tuesday.
St. Charles	Monthly.
St. Clair	Quarterly. Second Tues. of March, June, Sept., Dec.
St. Genevieve	Monthly. Second Wednesday.
St. Louis	Weekly. Saturdays.
St. Louis County	Monthly. Second Wednesday.
Schuyler	Semi-Annually. July and December.
Scotland	Monthly. Second Tuesday.
Shelby	Quarterly. June, September, December, March.
Stoddard	Quarterly. 1st Wednesday, March, June, Sept., Dec.
Sullivan	Monthly.
Vernon	Quarterly. 1st Tuesday, March, June, Sept. and Dec.
Warren	Monthly.
Washington	Monthly. First Saturday.
Wayne	Monthly.

AMERICAN MEDICAL ASSOCIATION

Next Annual Meeting at Portland, Oregon, July 11th to 14th, 1905.

President-Elect: LOUIS S. McMURTRY, Louisville, Ky.
President: JOHN H. MUSSER, Philadelphia, Pa.
First Vice-President: EDWARD JACKSON, Denver, Colo.
Second Vice-President: JAMES HALL BELL, San Antonio, Texas.
Third Vice-President: F. C. SHATTUCK, Boston, Mass.
Fourth Vice-President: B. C. PENNINGTON, Atlantic City, N. J.
Secretary and Editor: GEORGE H. SIMMONS, 103 Dearborn Ave., Chicago.
Treasurer: FRANK BILLINGS, Chicago.

MISSOURI STATE MEDICAL ASSOCIATION.

Next Annual Meeting, Jefferson City. May, 1906.

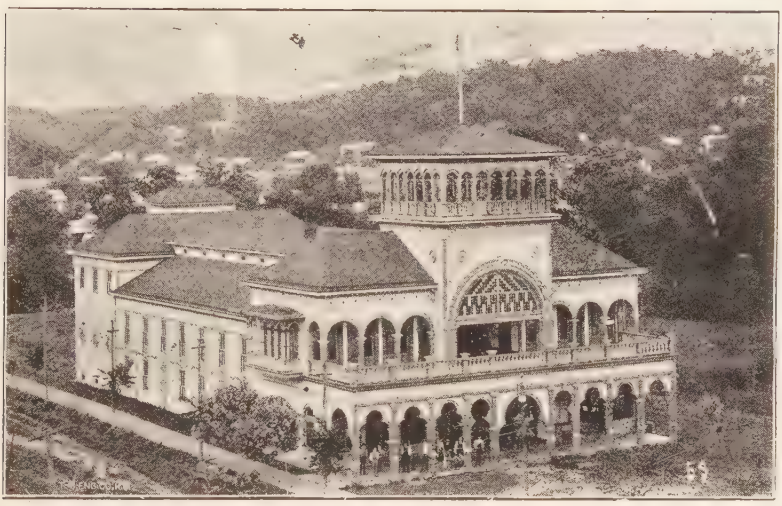
President: D. C. GORE, Marshall.
Vice-Presidents:
C. D. AVERY, Troy; J. P. BURKE, Laclede; F. A. GLASGOW, St. Louis; T. F. LOCKWOOD, Butler; E. LOWREY, Excelsior Springs.
Secretary: C. M. NICHOLSON, St. Louis.
Assistant Secretary: E. J. GOODWIN, St. Louis.
Treasurer: J. FRANKLIN WELCH, Salisbury.

COUNCILLOR DISTRICTS AND LIST OF UNORGANIZED COUNTIES.

First District.—F. B. HILLER; solidly organized.
Second District.—J. B. BRUMMALL; solidly organized.
Third District.—E. H. MILLER; DeKalb, Gentry, Harrison, Worth.
Fourth District.—C. H. WALLACE.
Fifth District.—L. W. DALLAS; solidly organized.
Sixth District.—WOODSON MOSS; solidly organized.
Seventh District.—W. B. DORSETT.
Eighth District.—F. J. LUTZ.
Ninth District.—B. M. HYPES; St. Francois.
Tenth District.—J. J. NORWINE; New Madrid, Ripley.
Eleventh District.—J. S. PORTERFIELD, Jr.; Bollinger, Scott.
Twelfth District.—W. S. ALLEE; solidly organized.
Thirteenth District.—R. D. HAIRE; Hickory.
Fourteenth District.—M. P. OVERHOLSER; solidly organized.
Fifteenth District.—A. R. SNYDER; Dade, Cedar.
Sixteenth District.—R. L. JOHNSON; Dent.
Seventeenth District.—J. E. TEFFT; Christian, Stone, Barry, Lawrence, Webster, Polk, Taney.
Eighteenth District.—H. C. SHUTTEE; Ozark, Oregon, Texas, Wright, Douglas.

ANNUAL MEETING

Missouri State Medical Association



Auditorium. Meeting Place of the Association.

ON TO EXCELSIOR SPRINGS.

MAY 16, 17, and 18 the Annual Meeting of the Missouri State Medical Association will be held in the Music Hall at Excelsior Springs, a very attractive town in the western part of the state, noted for its warm hospitality, its intellectual refinement, its mineral springs and other advantages as a convention city. Hotel accommodations are good and rates reasonable. The railroads with their usual liberality have made a reduced rate of one fare and one-third for the round trip, and the Committee on Scientific Work have presented a program of exceptional excellence. It contains the names of many of the best known medical men of the state.

The first day will be devoted to meetings of the officers, including the House of Delegates and Judicial Council. As far as possible all business of the Annual Meeting will be transacted on that day so that the legislative bodies of the Association will have an opportunity of attending the scientific meetings on the second and third days.

Wednesday morning the meeting of the Association will be called to order at 9:30 o'clock, and after a brief address of welcome, the reading of papers and discussions will be begun. At the evening session, Wednesday, the president's address will be followed by a light luncheon, after which one or more papers will be read

Program.

TUESDAY, MAY SIXTEENTH.

House of Delegates called to order 10:30 A. M.
Judicial Council called to order 10:30 A. M.
Roll call and announcement of result.
Reading of minutes of previous meeting.
Reading of President's message and recommendations.
Report of Committee on Arrangements.
Election of Committee on Nominations.
Report of Secretary.
Report of Treasurer.
Report of Committee on Scientific Work.
Report of Committee on Public Policy and Legislation.
Report of Publication Committee.

REPORT OF COUNCILLORS.

1st District.....Dr. F. B. Hiller, Kahoka.
2d District.....Dr. J. B. Brummall, Salisbury.
3d District.....Dr. E. H. Miller, Liberty.
4th District.....Dr. C. H. Wallace, St. Joseph.
5th District.....Dr. L. W. Dallas, Hunnewell.
6th District.....Dr. Woodson Moss, Columbia.
7th District.....Dr. W. B. Dorsett, St. Louis.
8th District.....Dr. F. J. Lutz, St. Louis.
9th District.....Dr. B. M. Hypes, St. Lonis.
10th District.....Dr. J. J. Norwine, Poplar Bluff.
11th District.....Dr. W. S. Allee, Olean.
12th District.....Dr. R. D. Haire, Clinton.
13th District.....Dr. M. P. Overholser, Harrisonville.
14th District.....Dr. A. R. Snyder, Joplin.
15th District.
16th District.....Dr. R. L. Johnson, Rolla.

Unfinished business.
New business.

Any Councillor finding it impossible to be present to make his report showing the status of the profession in his district, is requested to forward his report to the Secretary.

EXCELSIOR CLUB.
CHARTERED FOR USE OF THE ASSOCIATION.

Opening Program.

SCIENTIFIC BODY.

President's Address will be Read at Evening Session, Second Day.

Meeting called to order by Dr. T. N. Bogart, . . . Excelsior Springs
Chairman Committee on Arrangements.

Invocation—Rev. John H. Hubbard, ... Excelsior Springs

Address of Welcome—Judge W. E. Fowler, ... Excelsior Springs

The reading of papers and the discussion of same will be commenced and continued under direction of committee on scientific work.

Dr. W. E. Fischel, ... St. Louis
The Differential Diagnosis of Tumors in the Right Upper Quadrangle of the Abdominal Cavity.
Discussion opened by Drs. W. G. Moore, J. S. Meyer, W. J. Alexander, G. C. Crandall, Jno. Sturgis, S. R. McCabe, W. H. Farrar, P. S. Fulkerson, David Gordon.

Dr. F. J. Lutz, ... St. Louis
The Limitation of Rest in Treatment of Traumata.
Discussion opened by Drs. A. R. Kieffer, John C. Morfit, J. E. Tefft, F. R. Anthony, H. M. Grace, M. B. Clopton.

Dr. Wm. Porter, ... St. Louis
Tuberculosis a Problem for the General Practitioner.
Discussion opened by Drs. W. G. Moore, J. R. Lemen, C. W. Watts, J. B. Norman, J. S. Meyer, J. D. Seba, John Severs.

Dr. B. M. Hypes, ... St. Louis
Hydatiform Mole.
Discussion opened by Drs. T. J. Beattie, W. B. Dorsett, H. C. Crowell, H. S. Crossen.

Dr. L. W. Dallas. . . . . Hunnewell, Mo.
Some Permanent Sequelæ of Grip.
Discussion opened by Drs. J. S. Triplett, C. A. Jennings, T. N. Bogart, J. D. Ford.

Dr. A. J. Steele, ... St. Louis
The Present Status of Orthopedic Surgery.
Discussion opened by Drs. Herold W. Jones, Phil Hoffmann, J. F. Binnie, J. H. Tanquary, F. B. Hall.

Dr. H. W. Loeb. . . . . St. Louis
Recent Advances in the Etiology and Treatment of Hay Fever.
Discussion opened by Drs. M. A. Goldstein, J. C. Buckwalter, Hal Foster, Jas. E. Logan.

Dr. Harvey G. Mudd, ... St. Louis
Hypertrophy of the Prostate.
Discussion opened by Drs. Jacob Geiger, G. W. Broome, V. P. Blair, J. M. Billings, L. J. Dandurant, Martin Yates.

Dr. W. G. Moore, ... St. Louis
The Present Status of Therapeutics.
Discussion opened by Drs. Finsley Brown, J. R. Lemen, G. M. Tuttle, G. C. Crandall, L. L. Shofield, Wm. Porter, H. W. Soper, L. W. Dallas.

Dr. Bransford Lewis, ... St. Louis
Urinary Stone: Its Diagnosis and Treatment.
Discussion opened by Drs. J. Block, T. A. Hopkins, D. Morton, G. M. Phillips, Ernest G. Mark, Joseph L. Boehm, H. J. Scherck, G. W. Davis, C. F. Roberts.

Dr. J. F. Binnie, ... Kansas City
Cysts in the Lower Peritoneal Cavity.
Discussion opened by Drs. H. S. Crossen, P. Y. Tupper, H. C. Dalton, F. J. Lutz, J. Y. Brown, W. A. McCandless, A. H. Meisenbach.

Dr. J. R. Lemen, ... St. Louis
Hypertrophy of Heart Without Valvular Disease.
Discussion opened by Drs. Hugo Summa, W. G. Thompson, T. F. Lockwood, G. Ettmueller, Wm. E. Webb, W. G. Moore, J. T. Anderson, G. C. Crandall, L. W. Dallas.

Dr. A. R. Kieffer, ... St. Louis
Uterine Displacement.
Discussion opened by Drs. G. R. Highsmith, E. A. Babler, A. E. Hertzler.

Dr. C. Lester Hall, ... Kansas City
The Abdominal vs. The Vaginal Route in Pelvic Surgery.
Discussion opened by Drs. R. M. Funkhouser, W. A. McCandless, J. Y. Brown, A. H. Meisenbach.

Dr. Joseph Grindon, ... St. Louis
Recurrent Zoster-like Herpes.
Discussion opened by Drs. A. H. Ohmann-Dumesnil, J. Phillip Knoche, J. M. Langsdale, H. M. Lyle, W. H. Frick.

Dr. W. B. Dorsett, ... St. Louis
Transfusion.
Discussion opened by Drs. H. S. Crossen, C. A. Ritter, F. B. Hiller, J. A. Larabee, T. C. Boulware, B. A. Wilkes, G. C. Mosher.

Dr. John Zahorsky, ... St. Louis
The Quotient of Energy as a Basis in Infant Feeding.
Discussion opened by Drs. L. J. Jones, H. S. Shuttee, C. W. Watts.

Dr. R. M. Funkhouser, ... St. Louis
Remarks on Fractures Which are More or Less Frequent and Their Treatment.
Discussion opened by Drs. O. B. Campbell, A. R. Kieffer, F. Burke, W. D. Halliburton, Roland Hill, V. P. Blair, W. Bartlett.

SILOAM SPRINGS.

SCIENTIFIC PROGRAM
CONTINUED.

Dr. H. C. Dalton, ... St. Louis
Mistakes in Diagnosis of Appendicitis.
Discussion opened by Drs. Jacob Geiger, Francis Reder, J. P. Hennerich, W. C. G. Kirchner, T. E. Potter, W. S. Wallace, W. G. Thompson.

Dr. H. Tuholske, ... St. Louis
Personal Experience in Arterioplasty.
Discussion opened by Drs. Jacob Geiger, J. F. Binnie, C. M. Nicholson.

Dr. John Punton, ... Kansas City
Neurasthenia, Its Complications and Treatment.
Discussion opened by Drs. D. S. Booth, F. F. Fry, A. B. Miller.

Dr. E. H. Miller, ... Liberty
Puberty. Its Benefits and Dangers.
Discussion opened by Dr. H. M. Pollard.

Dr. Roland Hill, ... St. Louis
Benign Tumors of the Breast.
Discussion opened by Drs. J. D. Ford, R. M. Funkhouser, E. A. Babler, J. T. Jones, A. E. Hertzler.

Dr. F. B. Hiller, ... Kahoka
Cardiac Therapy.
Discussion opened by Drs. G. P. Wortham, Geo. P. Williams.

Dr. Howard Hill, ... Kansas City
An Anatomical Method of Restoration of the Torn Perineum.
Discussion opened by Drs. Frank A. Glasgow, W. B. Dorsett, B. M. Spotts.

Dr. T. F. Lockwood, ... Butler
Science of Medicine a Looted Profession.

Dr. E. A. Babler, ... St. Louis
Rectal Palpation.
Discussion opened by Drs. P. S. Tolbert, J. P. Edmonson.

Dr. T. N. Bogart, ... Excelsior Springs
Use and Abuse of Massage in the Treatment of Rheumatism.
Discussion opened by Drs. O. L. Turner, J. D. Seba.

Dr. R L. Johnson, ... Rolla
The Best Time to Give Quinine.

Dr. George Homan, ... St. Louis
An Historical Sketch of the Movement to Establish a Sanatorium in Missouri for Persons Having Incipient Tuberculosis.

REGENT SPRING

SULPHO-SALINE SPRINGS.

JABEZ N. JACKSON,
President.

S. M. Brown, Vice-President,
Monroe City.

J. C. Rogers, Vice-President,
Kansas City.

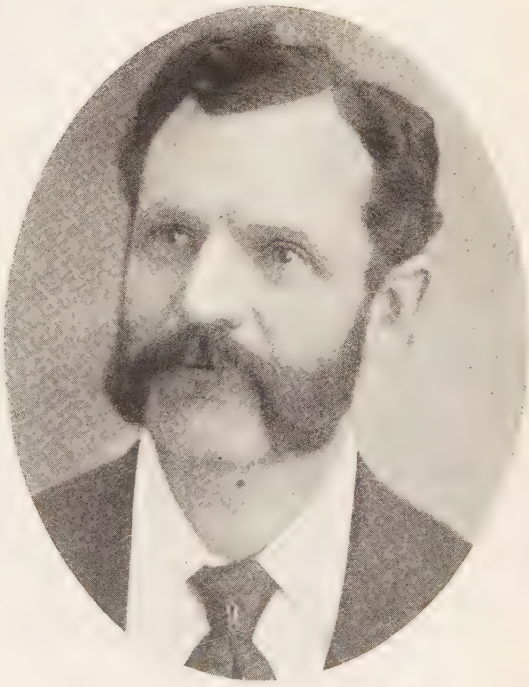
W. S. Thompson, Vice-President,
Armstrong.

T. E. Potter, Vice-President,
St. Joseph.

W. H. LATHAM, Vice-President.
Latham.

C. M. NICHOLSON, Secretary,
St. Louis.

E. J. GOODWIN, Assistant Secretary,
St. Louis.



J. FRANKLIN WELCH, Treasurer,
Salisbury.

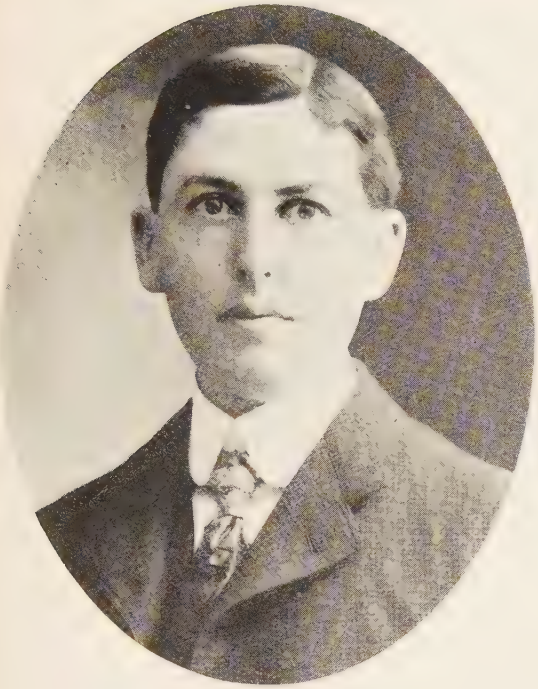
M. P. Overholser,
Harrisonville.

I. A. Marshall,
Ironton.

W. F. Mitchell,
Lancaster.

W. S. Allee,
Olean.

J. B. Brummall,
Salisbury.



F. R. Anthony,
Maryville.

U. S. Wright,
Fayette.

Ira Williams,
Maitland.

J L. Thorpe,
Jefferson City.

E. S. Cave,
Mexico.

C. C. Leeper,
Braymer.

P. L. Tipton,
Cooter.

S. Redman,
Platte City.

O. B. Campbell,
St. Joseph.

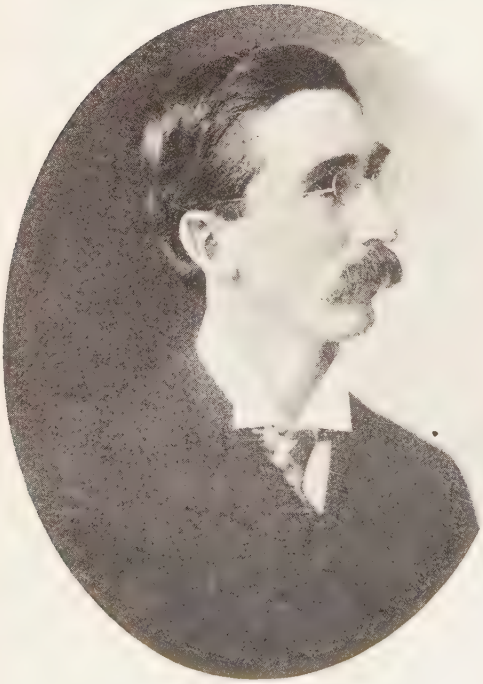
E. L. Chambliss,
Kansas City.

E. H. Thrailkill,
Kansas City.

H. E. Pearse,
Kansas City.

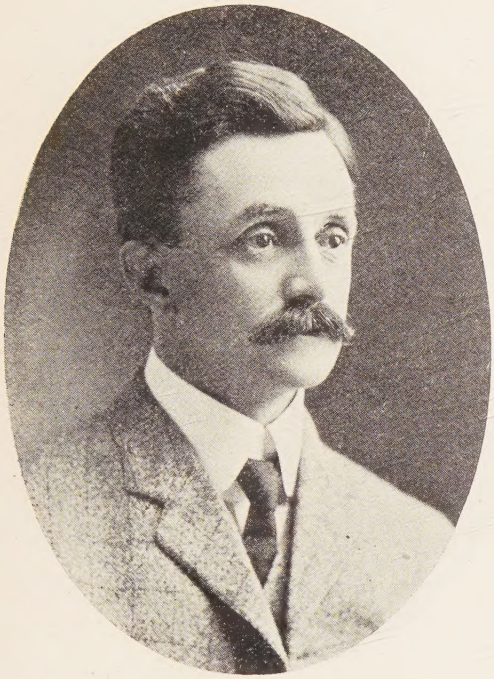
W. H. Gibbins,
Clinton.

E. L. Crowson,
Pickering.



R. L. Evans,
Boonville.

J. L. Anderson,
Warrensburg.



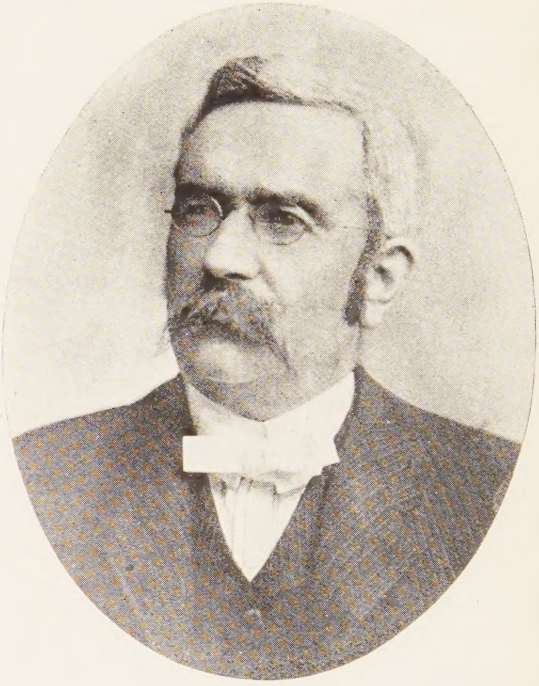
FRANK B. HILLER,
Kahoka.

H. C. SHUTTEE,
West Plains.

J. D. PORTERFIELD, JR.,
Cape Girardeau.

A. H. HAMEL,
De Soto.

W. B. Dorsett,
St. Louis.



A. R. Kieffer,
St. Louis.

John Young Brown,
St. Louis.

V. P. Blair,
St. Louis.